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DEPARTMENT OF COMMUNITY,
TRADE AND ECONOMIC DEVELOPMENT

2003 Biennial Energy Report

Energy Strategy Update: *Responding to the New Electricity Landscape*

February 2003

Prepared by the Energy Policy Division
Washington State Department of Community, Trade and Economic Development

Martha Choe, Director

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Message from the Director

Dear Reader:

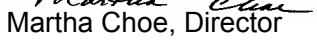
During 2000 and 2001 Washington State and the entire West Coast faced a major electricity crisis with wholesale prices rising to unprecedented levels and blackouts throughout much of California. Although that crisis has passed, Washington will continue to suffer economically from its legacy. The crisis also underscored a need to examine the state's energy and electricity policies. Every two years the Washington State Department of Community, Trade, and Economic Development (CTED) is required to report to the legislature on key energy issues (RCW 43.21F.045). In addition, CTED is responsible for updating and implementing the State Energy Strategy, a document that was first issued in 1993. This biennial report combines those two requirements into an update of the State Energy Strategy with a specific focus on electricity issues and policies.

CTED, with assistance from the Governor's policy office, undertook this effort with the help of a very knowledgeable and highly committed advisory committee. We also received contributions from many other interested parties and the general public. As you read this report you will note that it provides a qualitative and quantitative description and analysis of the electricity challenges that Washington and the Northwest face. More importantly, it sets out thirteen guiding principles for the direction of state efforts. These principles represent the collective discussions and agreements of our advisory committee. They recognize the fundamental economic, environmental and policy implications of our electricity system. They acknowledge the opportunities we have for foresighted action in areas ranging from utility integrated resource planning, to development of our state's nascent clean energy cluster, to the opportunities to capitalize on increased public awareness and concern about energy issues.

However, this document is not merely a statement of principles it is also an invitation to turn those principles into actions. Our next step, therefore, will be to develop specific goals and strategies to implement the principles. CTED will be taking this report to the general public, as well as meeting with diverse interest groups, stakeholders and advisory committee members about how we can next move from policy direction to concrete action.

We hope that legislators, the Governor and citizens of the state will find this document informative and useful and look forward to continuing to work with all of these groups on implementation efforts.

Sincerely,



Martha Choe, Director
Washington State Department of Community, Trade and Economic Development

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THE 2003 BIENNIAL REPORT - BACKGROUND AND PROCESS SECTION 1

Background

Every two years the Energy Policy Division of the Department of Community, Trade, and Economic Development (CTED) is required by state law to deliver an energy report to the governor and legislature.[1] The report focuses on implementation of the state energy strategy (SES) and other key energy issues. CTED has decided to use the 2003 Biennial Report as an opportunity to update the electricity portions of the 1993 State Energy Strategy.[2]

During this process, CTED concluded that there was a need for a more regular method to turn strategy directions into measurable goals and objectives. Thus it intends to use this document as a starting point for continued engagement with its key stakeholders and the general public during 2003 as it develops an action agenda (see Section 3 for more details).

The readers of this report will note many references to dramatic changes in the electricity industry since the original energy strategy was produced in 1993. In some sense it appears that change has been the only constant since that time. Some chapter titles from previous biennial reports illustrate that change:

1995 – Restructuring the Electric Utility Industry and *New Era for the Bonneville Power Administration*

1997 – The Electricity Industry in Washington – Turmoil and Transition

1999 – *Challenges and Opportunities for Washington's Energy Future*

Change and uncertainty have become the watchwords of the electricity industry. But with the advent of the first harbingers of the "perfect electrical storm" emerging in the summer of 2000, change and uncertainty reached new levels.

A Note on Other Energy Issues

Previous biennial reports have included information and analysis of many other topics beyond electricity, such as petroleum and natural gas supply and price, energy emergency and security, economic development, greenhouse gases, and transportation. With the exception of the information in Appendix D on clean vehicles (as required by ESHB 2522), this report does not address non-electric energy issues. However, CTED is actively involved with other energy issues. These include:

- *updating the state's petroleum emergency planning;*
- *assisting in the state's terrorism planning and preparedness efforts, especially energy infrastructure;*
- *supporting non-electric clean energy industries such as biofuels;*
- *analyzing natural gas issues and trends;*
- *developing greenhouse gas mitigation strategies; and*
- *maintaining the state's repository of energy data.*

Updates on these, as well as other energy policy documents, are available at the CTED Energy Policy Division website www.energy.cted.wa.gov

The "Perfect Electrical Storm" Pushed Electricity and Energy to the Forefront

Electricity price increases, blackouts in California, and fears of supply disruptions in the Northwest in 2000 and 2001 have been called the electricity system's equivalent of the "Perfect Storm" – a juxtaposition of events and actions that drove wholesale electricity prices in the western United States to unprecedented levels. During that period, Washington and the Northwest experienced one of the most

severe droughts ever recorded as hydroelectric output fell to 30 percent below normal. California's electricity restructuring experiment failed, generating more than 30 blackouts throughout that state. Natural gas prices spiked to levels ten times higher than normal. And companies such as Enron allegedly developed market manipulation schemes such as "Death Star" to extract billions of dollars from the wholesale market.

While Washington and the Northwest were able to avoid California-style blackouts, we certainly did not emerge from the storm unscathed. Wholesale (and eventually retail) electricity prices jumped dramatically, industries had to curtail operations or, in the case of aluminum smelters, shut down completely. Utility arrearages and disconnections skyrocketed, and there was more media and citizen attention to energy and electricity issues than at any time since the days of the oil embargos. Although wholesale electricity and gas prices fell dramatically in 2002, the debt incurred to pay off those high wholesale prices will be reflected in retail utility rates for several years. Ironically, falling wholesale electricity prices created new problems for some utilities, especially the Bonneville Power Administration (BPA), as they had hoped to recoup their early expensive purchases with surplus sales into a higher priced wholesale market.

Washington State's Response to the Perfect Storm

The Energy Policy Division of CTED was actively involved in helping state government manage the crisis. Governor Locke testified before Congress, held several press conferences, and made numerous public service announcements and speeches explaining the state of affairs and urging individual, state, and federal actions to help alleviate the crisis.[3] The Governor directed all state agencies to decrease their use of both electricity and natural gas by ten percent or more.[4] And in response to electricity supply concerns, Governor Locke issued several energy supply alerts that allowed for temporary emergency generation with provision for air quality mitigation actions. [5]

The state legislature also responded by enacting several significant energy bills such as changes in power plant siting requirements (EHB 2247), incentives for renewable energy production (HB 1839 and SB 6107), and an appropriation for low-income citizens impacted by high prices (HB 2222).

The Changing Electricity Policy Environment

In addition to the consequences of the "storm," there have been major changes in regional and national electricity policy that have generated a need to reexamine the State Energy Strategy.

The federal Energy Policy Act of 1992 was the major driver for a new competition-based system in the wholesale electricity market. As a consequence of wholesale competition, independent power producers (IPPs) with no direct ties to a specific utility or utility load were seen as the model for meeting future supply needs. The Federal Energy Regulatory Commission (FERC) issued rules to institute "open access" to the nation's electricity grids and then expanded those efforts to include creation of Regional Transmission Organizations (RTOs) and a national Standard Market Design (SMD).

In 1996, the four Northwest governors charted a regional process for the *Comprehensive Review of the Northwest Energy System*, largely in anticipation of open retail access throughout the region. Some states, including California, Oregon, and Montana, chose to restructure their retail electricity systems to provide for some level retail access for electricity. Washington State declined to do so.

These and other electricity policy issues have been discussed in previous biennial reports and continue to engage CTED, the Governor's office, the Utilities and Transportation Commission (UTC), and the legislative branch. Many of these issues and policies such as SMD and the future role of BPA are ongoing.

This fluid and uncertain electric policy environment underscored the need for Washington to reexamine its strategic vision and directions and to have a process to

regularly and systematically respond to such changes.

Relationship of the SES update to the Northwest Power Planning Council's Fifth Power Plan

One of the principal responsibilities of the Northwest Power Planning Council (NWPPC) is to develop periodically a regional power plan. NWPPC produced its last revised power plan in 1998 and is currently scheduled to complete its fifth plan later in 2003. As part of its planning process, the NWPPC uses its substantial quantitative analytical resources that include demand modeling, risk modeling, price analysis and forecasting, conservation resource estimation, and supply side analyses. Because Washington is a member of the NWPPC – a multi-state compact of the four Northwest states – state government does not need to develop these types of analytical tools and capabilities. Since the Northwest is an integrated electricity system, it is also most appropriate to undertake such modeling and analysis at a regional scale.

Why then shouldn't Washington simply rely on NWPPC's work as a de facto electricity strategy? There are a number of compelling reasons for Washington to develop its own strategy update.

- Unlike most other states (such as Oregon), Washington is not predominantly served by investor-owned utilities (IOU), but is made up of 63 public utility districts, municipal utilities, cooperatives, and IOUs. The state's electricity policy is driven by a mix of state regulation (via the UTC) and local decision-making.
- Seven of the region's ten aluminum smelters are located in Washington, making the regional and local impacts of smelter viability particularly significant.
- Most of the region's hydroelectric capacity is within Washington's borders.
- BPA provides nearly 50 percent of Washington's electricity supply.
- Washington has a unique and particularly complex set of institutions involved in establishing electricity policy (see Appendix A for a more detailed discussion).

Current law also requires that the State Energy Strategy be updated periodically.

Process

During the 2002 legislative session, a bill was introduced requiring CTED to update the State Energy Strategy by December 31, 2002. Although that legislation did not pass, CTED reached agreement with the House and Senate Energy Committee chairs and the Governor's office on a process to do so.

CTED, in close cooperation with the Governor's office, began the update during the summer of 2002. (It was determined that an effective strategy would require the participation of a wide range of interests both to provide CTED with insight into the industry and to help shape overall electricity policy directions).

To involve interested parties, CTED formed a SES Advisory Committee comprised of 19 individuals representing the legislature, electric utilities, businesses, labor, environmental organizations, low-income advocacy groups, and state agencies. The committee held five full-day meetings during the summer and fall of 2002.[6] At those meetings, the members received briefings and held discussions on:

- the general electricity situation;
- financial markets and electricity;
- natural gas issues related to electricity generation and supply;
- environmental impacts of electricity;
- energy efficiency and renewable generation;
- regional and national electricity issues (RTO, SMD, BPA's future); and
- impacts of high electricity prices on low-income, business, industry, and utility sectors.

Where possible, CTED used the expertise and knowledge of the committee members to provide information on these issues.

The SES Advisory Committee stated, and CTED agreed, that the development of a set of guiding principles for state electricity policy was a critical aspect of the update. Members of the committee worked closely with CTED staff to craft a set of 13 principles that the committee believed represented a consensus of the group. These principles are set forth and discussed in Section 2.

As CTED and the committee moved forward in the process, they recognized they would not be able to fully translate those principles into specific goals, objectives, and action items by the report deadline. However, because this translation process is vital, CTED will be using this document as a basis for further elaboration of the principles into specific objectives with measurable outcomes and timelines. It will begin that process, continuing to involve committee members and the general public in the spring and summer of 2003. This is discussed in more detail in Section 3.

For the update CTED developed a substantial amount of quantitative information on the electricity system and crisis of 2000/01. In previous biennial reports, it has included a set of energy indicators which presented data on Washington State energy use, production, cost, and impacts. They have typically been relatively high-level information with a one or two-year time lag due to data availability. CTED recognized that although such information remains valuable (especially as it highlights long-term energy trends), the limited focus on electricity data and the time lags made it less useful for the SES update process. Consequently, Section 4 of this report contains a new compilation of data emphasizing more detailed, near-term electricity information. Although the other non-electricity energy indicators are not included in this biennial report, they are available on the CTED Energy Policy Division web site at www.energy.cted.wa.gov.[7]

The report contains several appendices. Appendix A illustrates the institutions and resulting complexity involved in the development and promulgation of state electricity policy. Appendix B summarizes comments received at two public meetings on the strategy update. Appendix C contains statements submitted by members of the advisory committee who wanted to elucidate specific issues or concerns. Appendix D has been included in response to a legislative requirement in ESHB 2252 that CTED report on clean vehicle purchases by state government. Appendix E provides a list of acronyms and abbreviations referenced throughout this report. And finally, Appendix F details a staff directory and topical index for the CTED Energy Policy Division.

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1 RCW 43.21F.045

2 Washington State Energy Strategy- An Invitation to Action, WSEO 92-158, January 1993. http://www.energy.cted.wa.gov/STRATEGY1.HTM

3 See www.governor.wa.gov/energy/energy.htm

4 Governor's Directive No. 01-01 available at http://www.governor.wa.gov/eo/dir01-01.htm. Overall executive branch agencies were able to achieve the 10% savings.

5 The Governor's Energy Orders are available at http://www.governor.wa.gov/energy/orders.htm

6 A membership list with contact information is available at http://www.energy.cted.wa.gov/Energy%20Strategy/Energy%20Strategy%20Advisory%20Committee%20Members.pdf

7www.energy.cted.wa.gov. These indicators are scheduled to be posted in late February 2003.

LOOKING TOWARD OUR ELECTRICITY FUTURE SECTION 2

A Vision for Washington's Electricity Future

Washington and the Northwest are blessed with unique assets that provide a sound foundation for achieving a sustainable electricity future. A world-renowned hydro-based generation system, the Bonneville Power Administration (BPA) has a unique role as the region's largest provider of electricity generation and transmission while supporting a broad range of public purpose activities. Other institutions encourage collaboration and regional planning.

Governor Locke's 2002 Executive Order 02-03, *Sustainable Practices by State Agencies*, underscores Washington's commitment to sustainable practices. The state supports the mutually compatible goals of economic vitality, a healthy environment, and strong communities.

The directions outlined in this update of the State Energy Strategy (SES) provide some of the near-term approaches for sustaining and improving our electricity system. They include:

- Creating and supporting resource-planning processes that ensure adequate supplies.
- Strengthening the Northwest's renewable based system.
- Considering the risks of different resources and reducing exposure to fuel price volatility.
- Minimizing exposure to future environmental mitigation costs such as air emission charges.
- Balancing a portfolio of resources to minimize power supply disruption.
- Considering supply and demand management opportunities.
- Optimizing the performance of the transmission and distribution system.
- Assessing how risks and costs should be shared among stakeholders in order to best ensure consistent and sustainable investment in the electricity system infrastructure.

Vision Statement

A sustainable electricity power system is one that meets the needs of Washington's current residents, businesses, industries, and institutions without compromising the ability of future generations to meet their own needs. It is based on a balanced approach that provides adequate, reliable and affordable electricity services by making efficient use of electricity resources, supporting environmental stewardship, and promoting social equity.

Guiding Principles

Introduction

The 1993 SES began with a set of guiding principles developed by the Energy Strategy Committee. The 1993 SES addressed all aspects of state energy use from electricity to transportation, while the current strategy focuses almost exclusively on electricity issues. Although many of those guiding principles remain relevant, the Washington State Department of Community, Trade and Economic Development (CTED) asked the 2002 SES Advisory Committee to revisit them in light of the major changes in the electricity landscape since the 1993 SES. The guiding principles (set forth below in bold type) represent a general consensus by the members of the advisory committee. The principles range from relatively general statements of direction for state electricity/energy policy to fairly specific statements on electricity issues of particular importance to Washington. CTED Energy Policy staff produced and SES Committee members reviewed the narrative following each principle.

Guiding Principle #1

Encourage all load-serving entities to adopt and implement integrated resource plans to ensure they have adequate resources to meet their obligation to serve their customers' projected long term energy and capacity needs.

During the latter half of the 1990s many states began to investigate whether to shift their electrical systems from a regulated monopoly-based utility system in which consumers receive electricity service from a single utility provider, to a retail open access structure, which would allow consumers to choose their electricity provider. This process is often referred to as electricity deregulation or restructuring. Several western states - notably California, Oregon, and Montana - chose to adopt some level of open retail access. Washington State chose not to move in that direction and, in light of the California restructuring debacle, it is unlikely to do so in the foreseeable future. Consequently, load-serving utilities with an explicit obligation to serve all customer loads will remain the predominant providers of electricity for Washington consumers.

The Pacific Northwest states have a long history of using integrated resource plans (IRP) and tools as a basis for utility resource and planning decisions. The federal 1990 Northwest Power Act helped to establish the IRP approach and the Northwest Power Planning Council (NWPPC) has used IRP as a key element in its regional electricity planning process. Many consumer-owned utilities have depended on IRP as their principal planning tool. In addition, the Washington Utilities and Transportation Commission requires that its regulated utilities regularly develop and adopt integrated resource plans. (WAC 480-100-238: Least cost planning.)

The primary purposes of this principle are to:

- Reaffirm the continued predominance of load-serving utilities as the state's electricity service model;
- Underscore the continuing obligation that the state's utilities have to serve their customers' load requirements and to acquire the resources necessary to do so;
- Recognize that current and future electricity markets are likely to experience greater price volatility, and supply risk than has historically occurred prior to 2000;
- Acknowledge that integrated resource planning provides the best general method for utilities to ensure that they can serve their customers' current and future needs; and
- Recognize that, because of market volatility, integrated resource plans and their implementation will need to be changed as circumstances dictate.

Guiding Principle #2

Encourage the development of a balanced, cost-effective and environmentally sound resource portfolio that includes conservation, renewables (e.g., wind, geothermal, hydro, biomass, and solar technologies), and least-cost conventional resources.

This principle expands on the concepts set forth in principle #1 by focusing both on the types of new resources that should be developed and the underlying principles of integrated resource planning. If we expect Washington utilities to acquire the resources they need, we also expect them to do so in the most environmentally sensitive and cost-effective manner possible. While conservation is the resource of choice, there is not sufficient cost-effective conservation to meet all of the region's needs. Similarly, although many renewable resources (such as wind power) are often cost competitive with gas-fired combustion turbines when federal subsidies and risk mitigation factors are included, it is not clear that the region can rely upon renewables to cost-effectively meet our need for new resources. Therefore, a balanced portfolio of cost-effective conservation, renewables, and fossil-fuel generation will be needed to meet our increasing electricity loads. Section 4(e)(1) of the federal Northwest Electric Power and Conservation Act of 1980 creates a template for BPA to follow when acquiring resources. It states that, of the cost-effective resources available, "priority shall be given: first, to conservation; second, to renewable resources; third, to generating resources

utilizing waste heat or generating resources of high fuel conversion efficiency; and fourth, to all other resources." Over the years, there has been vigorous discussion about whether this template should be extended to all load-serving entities in the region. Whether or not utilities follow this prioritization, integrated resources plans by utilities, along with the NWPPC's Regional Power Plan, should enable utilities to meet local and regional needs in the least risky, most cost-effective, and most environmentally sensitive manner possible.

[For further information, see questions # 2, 14, 17, and 18 in Section 4.]

Guiding Principle #3

Protect the benefits to Washington consumers from the Federal Columbia River Power and Transmission System (FCRPS).

This principle acknowledges that Washington State and the Pacific Northwest have received considerable benefits from the presence of the Federal Columbia River Power and Transmission System (FCRPS). Electricity prices in the Northwest have historically been among the lowest in the United States, in large part due to the preeminent role of the federal hydroelectric and transmission system in the region. BPA supplies approximately half of the region's electricity and Washington buys half of BPA's output. When BPA, which markets the power from the federal dams, raised its wholesale rates last year in response to the drought and electricity crisis of 2000-01, the shock was felt throughout the region and especially in Washington. It is very much in the interest of Washington consumers for BPA to be financially healthy and to be able to supply power at a low cost over the long run.

Washington's access to the FCRPS cannot be taken for granted. For example, in recent years, the Midwest/Northeast Alliance has attempted to dilute those benefits through calls for market-based rates and privatization of BPA. It is also in Washington's interest to work with all other stakeholders in the region to allocate the output of the federal system through long-term contracts in a manner that is fair to all consumers in the region and respects the "preference rights" of consumer-owned utilities. This will ensure that both BPA and the region's utilities can plan for their responsibilities within a relatively stable framework. It is in the state's interest to encourage a policy framework that acknowledges BPA's unique ability to provide regional leadership in energy planning, management of electricity resources, and environmental stewardship.

Northwest consumers of electricity have paid off the debt of the federal hydroelectricity system since its inception. Although they are not the owners of the system, they are the payers of the mortgage. State policy should protect the benefits of the FCRPS for Northwest consumers who have for 50 years proven themselves to be worthy stewards of the system.

Guiding Principle #4

Preserve and promote Washington's cost-based energy system to benefit the end use consumer by providing reliable power and reduce consumers' vulnerability to supply shortage and price volatility. At the same time, the state should promote policies that harness market forces in the wholesale energy market to reduce customer costs and increase reliability while protecting the environment.

This principle acknowledges that the 2000-01 electricity crisis resulted in major disruption to the state's citizens and economy, higher electricity prices, negative impacts on business and industry, more residential shutoffs, and a more volatile market. It focuses on two aspects of the electricity system – retail service to homes, businesses, and industry, and wholesale markets that directly serve utilities and some large industrial customers.

Since the 1993 SES, the electricity landscape has changed significantly. Beginning with the Energy Policy Act of 1992, the federal government set in motion a major change in the wholesale electricity market. The Act required that the transmission system be opened up to wholesale sellers of electricity including independent power producers. As noted in the discussion of Principle #1, some

states chose to respond to this change in federal law by restructuring their electricity systems, separating ownership of distribution systems from generation, and allowing some or all consumers to buy power from suppliers other than their own local utility. These changes in state law have resulted in a greater role for market forces throughout the western United States. There is still considerable debate over the extent to which the specific restructuring path taken in California contributed to the electricity crisis of 2000-01 and the extent to which the greater reliance on energy markets in general contributed to the crisis. Washington continues to be extremely cautious about increasing its reliance on market forces to provide for its electricity supply.

While we assume that the current regulated and public utility structure will remain the model for the foreseeable future in Washington, wholesale markets will continue to have a role in electricity generation and transmission. While retail access to the electricity market will likely be limited to large industrial customers of some utilities, the main question for Washington is the extent to which our load-serving utilities rely on market purchases or their own resources to serve their loads. State policy should capture the benefits of wholesale competition without subjecting consumers to the risk of volatility and uncertainty that fully deregulated electricity markets tend to exhibit. It should provide for clear responsibility for risks, contingency planning (such as demand response), and good market oversight. Washington must maintain its market model that ensures the viability of independent power producers in a capital limited, low-priced wholesale electricity market, while, at the same time, resisting the attempts by the Federal Energy Regulatory Commission (FERC) to impose its vision of the future on the Northwest.

[For further information, see question #4, Section 4.]

Guiding Principle #5

Encourage utilities, BPA and others as they work to reduce congestion and improve the reliability of the transmission system, to assess all potentially practicable and cost-effective alternatives, including but not limited to targeted demand reductions, generation additions, system upgrades, and new line construction.

This principle focuses on a critically important issue for the electricity future of the state and region. BPA controls and operates the vast majority of the region's electricity transmission facilities. Because BPA has such a dominant position in the regions high voltage transmission system, its decisions on system upgrades and transmission alternatives will dominate the future direction of transmission.

The Northwest and the rest of the nation have both experienced significant increases in the use of the electricity transmission grid over the last several years. These increase, coupled with limited major transmission upgrades over the last 15 years, have resulted in growing concerns about line congestion, access to transmission services, and system reliability. There are now underway two proposed responses to these problems.

One is a complete reform of the governance of the transmission system. FERC is advancing this governance reform effort by pushing for regional transmission organizations (RTO) to be created throughout the country, which according to FERC's vision, are designed to oversee an orderly expansion of the transmission system and to develop a fair and rational market for transmission services. Because It is not clear whether this policy is in the interests of the electricity consumers of Washington, and state officials have expressed concerns about the formation of a Northwest RTO.

The other response to transmission problems is to address, regardless of the ultimate governance structure, the necessity for expansion of the system, the careful study of whether alternative siting of generation (including distributed generation) will replace the need for more transmission and vice-versa, and whether the need for both new transmission and generation can be avoided altogether through reduction of central generation by conservation, efficiency, and demand management. These policy objectives can be achieved either through the current governance structure of the

transmission system (e.g., congressional approval of borrowing authority for BPA so BPA can finance transmission additions, or through an RTO framework). Washington's challenge is to determine how to achieve these policy objectives, in the face of political and jurisdictional struggles over governance, in a manner that most benefits the public at large.

[For further information, see question #15, Section 4.]

Guiding Principle #6

Foster a predictable and stable investment climate to facilitate adequate and efficient access to capital markets for independent power producers, federal agencies and Washington's public and private energy industry.

Electricity system investments, be they in generation, distribution, transmission, or energy efficiency, are by their very nature capital intensive. Consequently, access to capital markets is critical to the future viability of the state's electricity system. Capital availability for electricity system investment tightened considerably in 2001 and 2002. On the federal level, BPA has begun to approach the limits of its federal borrowing authority, a situation that could make it very difficult for the region to upgrade and expand its transmission system. Increased wholesale power costs, decline in demand, and the collapse of the wholesale spot market have threatened both public and private utilities' ability to borrow and caused their credit ratings to suffer. In the wake of the Enron collapse, the financial position of independent power producers is extremely precarious. Liquidity in the wholesale energy markets has also suffered, limiting their potential to provide products and services, such as hedging instruments, to utilities.

While the state cannot by itself resolve issues relating to capital availability for the acquisition of new energy infrastructure and efficiency improvements, it can play a constructive role. Some state activities might include:

- Public officials should continue to convey to capital markets that Washington's investor-owned utilities are being regulated in a manner that facilitates timely and economic recovery of prudent capital investments.
- Urge borrowing authority for BPA.
- Resist regulatory initiatives such as FERC's Standard Market Design (SMD) proposal that undermine the benefits of the Pacific Northwest's low-cost, publicly governed and well-regulated system.

[For further information, see question #9, Section 4.]

Guiding Principle #7

Promote Washington State as a leader in clean energy technologies by supporting and attracting companies that are active in developing, manufacturing and selling these technologies. In addition, lead by example with clean energy, energy efficiency, and sustainable practices in state and local government operations.

This is a two-part principle that addresses the state's targeted economic development strategies and the role of state and local governments as both marketplace and modeler of sustainable practices.

<u>Supporting the Clean Energy Industry</u>

In 1997 CTED commissioned a study to determine the extent of the renewable energy and energy efficiency industry in Washington (*The Next Generation of Energy: the Renewable Energy and Energy Efficiency Industries in Washington State).* That study concluded that Washington's nearly billion-dollar clean energy industry is roughly comparable in size to the state's wholesale apple industry. A second study showed that future markets for advanced energy technologies such as fuel cells, solar photovoltaics, and wind, as well as energy efficiency have great potential for the state of Washington. (See Climate Solutions Report: *Poised for Profit: How Clean Energy Can Power the Next High-Tech Job Surge in the Northwest).* Consequently, the Locke administration has chosen the clean energy industry as one of four business development focus areas. CTED is already using the resources of its Energy Policy, Economic Development, and Trade Divisions to maintain and build the clean energy industry. There are existing state programs, such as the Rural

Economic Development Fund, that have been effective in accomplishing these goals.

Sustainable Government

In September 2002, Governor Locke issued Executive Order 02-03 *Sustainable Practices by State Agencies*, which directed state government to serve as an exemplar for sustainable practices. The order requires each executive branch agency to develop a sustainability implementation plan. Agencies are encouraged to minimize energy and water use and shift to clean energy for both facilities and vehicles.

State and local governments are an important market for energy conservation products and renewable energy. The implementation of sustainable practices by state and local governments will help develop an important market for clean energy goods and services.

The state has already adopted several policies that assist the development of the clean energy industry. These include small scale net metering; sales tax exemptions for wind, solar, small hydro power projects, and fuel cells; green tariff requirements for large utilities, and the rural economic development fund for small utilities. Several of these incentives will come up for review by the legislature in future sessions. The state should investigate their effectiveness and determine the need for continued support.

[For further information see:

- *The Next Generation of Energy: the Renewable Energy and Energy Efficiency Industries in Washington State* http://www.energy.cted.wa.gov/ECONWReport/
- *Poised for Profit: How Clean Energy Can Power the Next High-Tech Job Surge in the Northwest* http://www.climatesolutions.org
- *Sustainable Practices by State Agencies.* http://www.governor.wa.gov/eo/eo%5F02%2D03/]

Guiding Principle #8

Use data and analysis based on sound scientific and economic principles to inform energy policy.

This principle is self-explanatory. It recognizes that both scientific and economic analyses are integral components of any carefully developed energy policy. The analytical work of the NWPPC – which includes evaluation of electricity demand and supply balances, projections of energy resource costs, environmental assessment, and conservation resource estimation – is a prime example of scientific and economic analyses and data in energy policy development. The state of Washington depends significantly on the work of the NWPPC, especially its periodic regional power plans. For this update of the SES, we have used the NWPPC's draft materials developed for its 2002-03 Fifth Power Plan.

[For further information, see NWPPC Fifth Power Plan materials http://www.nwcouncil.org/energy/powerplan/]

Guiding Principle #9

Evaluate energy policies by how well they improve the safety, security, and reliability of the system.

The purpose of this principle is to acknowledge the added importance of energy security issues in the state's energy policy considerations. The events of September 11, 2001, have led to an increased emphasis on infrastructure security issues. Electrical and energy systems are key elements of those security concerns. Maintaining the safety, security, and reliability of energy systems is vital to a functional society.

Energy emergency planning and response are not a new activity for either CTED or state government. CTED has explicit statutory responsibilities to plan for and respond to energy emergencies (RCW 43.21G) and regularly works with the energy industry and all levels of government on these issues. The terrorist attacks have added a new dimension to those responsibilities. The Governor's Domestic Security Executive Group is charged with developing a comprehensive plan to address terrorism concerns in the state. CTED chairs a subcommittee that is focusing on utility infrastructure issues.

This increased emphasis on security relates directly to ongoing concerns about system reliability. Electricity policy makers and planners need to ensure that the lights stay on during droughts, ice storms and transmission failures. Thus, when determining how best to secure the state's transmission and

generation needs, policy makers must consider how each proposed solution affects the reliability of the entire electricity system.

[For further information, see:

- The Washington Utilities and Transportation Commission report, *Washington Electric Utility Service Quality, Reliability, Disclosure and Cost Report, December, 1998,* available at: http://www.wutc.wa.gov]

Guiding Principle #10

Educate the public on energy issues.

The electricity crisis of 2000-01 resulted in nearly unprecedented citizen and media focus on electricity and energy issues. The crisis forced Washington citizens and businesses to recognize that electricity, a commodity that many tend to take for granted, was a vital part of our state's economic well – being. The challenge ahead for the state and the electricity industry is to maintain and increase this level of awareness. Energy and electricity issues are inherently complex, involving topics as diverse as resource economics, energy technology, finance, environmental assessment, and governmental structure.

There are many training, education, and technical assistance resources available in Washington that address specific areas ranging from energy courses for building operators to industrial sector energy hotlines.

Some of the electricity education areas that should be considered are:

- How does the electricity system work?
- What are the relationships between electricity supply and demand?
- What actions can individuals, businesses, and industries take to influence electricity demand and usage?
- What are the key characteristics and issues related to new generation technologies, (costs, location constraints, environmental impacts, capital needs, etc.)?
- Who has responsibility and authority for energy decisions? - Government and at what level – local, state, regional, or national? Private sector – businesses, industries, energy companies, independent power producers, finance community?

To begin this education effort, CTED will use the update of the SES to speak with civic, business, and community groups. This will provide an opportunity to update individuals on the electricity landscape and to obtain comments and suggestions on electricity issues and policies.

Guiding Principle #11

Actively engage with nearby states, provinces, tribes, and the federal government to help accomplish common energy goals.

Washington's electricity and energy systems do not exist in isolation. They are tied to those in the western U.S. and western Canada through an extensive series of transmission lines. Despite our abundance of hydroelectric generation within the state's border, some of its electricity and the vast majority of its other energy resources come from out of state. With the exception of the Centralia coal mine, Washington possesses no significant fossil fuel resources and is dependent on imports from Alaska for most of its petroleum and on Canada and the Rocky Mountain region for its natural gas supplies. Electricity moves throughout the Northwest, from coal-fired plants in the Rocky Mountain region, and from seasonal exchanges with California and the Southwest.

The federal government plays a major role in Washington's electricity system. The Army Corps of Engineers and the Bureau of Reclamation own and operate many of the region's largest hydroelectric dams, and BPA owns nearly three quarters of the region's transmission assets. At the federal level, efforts are underway to pass the most significant energy legislation since 1992. FERC regulates the interstate transmission system and is pushing hard to expand its control through creation of RTOs and promulgation of a SMD for the nation's grid.

Consequently, it is critical that Washington continue to work cooperatively with regional governmental, quasi-governmental, and private organizations.

Key regional electricity institutions include the four-state NWPPC, the Western Governors Association (WGA), and its energy

organizations – the Western Interstate Energy Board (WIEB) and the Committee on Regional Electric Power Cooperation (CREPC), as well as other specialized groups such as interstate utility organizations, electricity security coordinators, and regional reliability councils.

Washington State faces a challenge to balance state-specific interests with regional ones. This balancing effort is more important as both the structure of the electricity system remains clouded and governmental roles and responsibilities are in dispute. For example, will a northwest RTO be created? If so, when and in what final form? How does the region deal with interstate transmission issues in the interim? What role will the state and federal government play in regulating the transmission system? These are some of the questions that our state energy policymakers will have to consider over the next several years.

[For further information, see question #3, Section 4 and Appendix B.]

Guiding Principle #12

Promote policies and programs that provide access to basic energy services to those on limited incomes.

Low-income individuals spend pay a higher proportion of their income on energy services. For nearly three decades the federal government has provided energy support to low-income populations through programs such as the Low-Income Home Energy Assistance Program (LIHEAP) and Weatherization. In addition, many utilities offer weatherization programs, discounted rates, financial assistance, or other services to their low-income customers.

In 2001, Washington State appropriated $1 million for low-income energy assistance state funding for weatherization. Nonetheless, the need for both bill assistance and weatherization services far outstrips state, utilities, or federal resources. Often less than one-quarter of the eligible population can be served. This disparity between need and available resources grew worse in 2001-2002 as increases in electricity and natural gas rates more than offset recent increases in federal, state, and utility support. Current budget shortfalls mean that the state will have few resources available for additional assistance.

Some other actions that the state and utilities can do include:

- Continue to urge our congressional delegation to support increased federal funding for LIHEAP and weatherization;
- Encourage citizens to support Energy Matchmakers, a program that matches individual contributions with utility funds;
- Consider innovative utility assistance programs.
- Analyze the costs of bill arrearages and utility shutoffs and the potential financial benefits of support programs.

[For further information see, question #8, Section 4, and Appendix A.]

Guiding Principle #13

Promote energy policies that maintain and or improve environmental quality.

It is widely acknowledged that the production and use of energy and electricity can have significant environmental impacts. The 1993 Energy Strategy emphasized this by noting, "[e]nvironmental problems and their solutions are closely tied to how we develop and use energy" (p. 33). CTED energy policy statutes specifically require that the development and use of energy resources shall be consistent with the statutory environmental policies of the state (RCW 43.21F.015 (3)). In addition, Governor Locke has established environmental improvement as one of his priority focus areas.

The scope of energy/electricity and environmental issues is vast, including:

- climate warming;
- air pollution;
- water supply;
- water quality;
- habitat for fish and wildlife; and
- implementation of environmental laws.

Washington has made important progress in many of these areas by doing the following:

- Developing siting standards for emergency generation that has reduced the use of the

most polluting sources such as diesel generators and single cycle turbines.

- Promoting renewable energy through net metering, fuel mix disclosure, green option tariffs, and tax exemptions for wind and solar.
- Acquiring conservation resources by working with regional organizations such as BPA, the Norwest Energy Efficiency Alliance, and the NWPPC, and by specific state policies such as progressive building codes.

Perhaps the most significant environmental issue for energy production and use is the emissions of greenhouse gases (chiefly carbon dioxide) and the resulting climate change impacts. Most human-caused greenhouse gas emissions come from energy production and use. There is now broad scientific agreement that global warming is occurring. The Intergovernmental Panel of Climate Change concluded in 2001 there is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activity. The challenge for Washington is to find ways to reduce overall greenhouse gas emissions in general. More specific to the electricity sector, Washington faces the challenge of increased emissions as it moves more to fossil fueled facilities (principally natural gas) to meet its increased electricity demand. In the Pacific Northwest, changes in precipitation patterns due to global warming may affect the seasonal availability of hydropower.

Some of the key issues that will be considered by state and regional energy policy makers include:

- the scope of mitigation of greenhouse gas emissions, especially related to power plants;
- fish and wildlife impacts of hydroelectric operation, mitigation requirements, and impacts on electricity supply;
- local energy facility siting and land use considerations for technologies such as transmission lines and renewable energy projects; and
- development of specific standards for state power plant siting through the Energy Facility Site Evaluation Council (EFSEC).

[For further information, see question #16, Section 4 and Governor Locke's website www.governor.wa.gov, “Protecting Natural Resources.”]

Section 2, *Looking Toward Our Electricity Future,* provides overall direction for Washington State electricity policy. However, for the guidelines to have concrete value, CTED must translate them into specific, measurable goals, objectives, and actions. This section describes a process for developing those specifics.

Governor Locke has directed executive branch agencies to develop specific and measurable directions for their activities. He has made this *Governing for Results* effort one of the cornerstones of his administration.[1] It recognizes that state agencies must focus their efforts in areas where they can add value, establish measurable goals and objectives, and determine progress toward those goals and objectives. The Department of Community, Trade and Economic Development (CTED) believes that this approach can provide a solid basis for its continuing work on the state Energy Strategy (SES).

This section describes four components of the process:

- Continuing the SES Process;
- A Template for Turning Directions Into Action;
- CTED's Process and Timeline; and
- Preliminary Discussion of Goals, Measures, and Actions.

Continuing the SES Process

CTED staff began the revision of the electricity sections of the 1993 Energy Strategy with the expectation that the work would be completed by the end of 2002. However, limited time and resources meant the agency was not able to get into as much depth as it would like. Development of the guiding principles and dialogue with the advisory committee also led to a much more deliberative and lengthy process than had been anticipated.

It was also recognized that energy (and especially electricity) decision making in Washington and the Northwest is a complex "scrum" of private sector, utility, association, and government interests. (See Appendix A.) Developing meaningful policy goals would require the broadest possible participation among interested stakeholders. Establishing a continuing process not only maintains involvement with advisory committee members but it also engages the public and other key interest groups (such as industrial customers).

It also became clear that meaningful goals also require accountability standards. While CTED develops specific goals and measurable objectives for all of its programs, it is only one among many in carrying out state electricity goals. All participants must develop specific goals, actions, and measures in order to have some reasonable expectation of success.

A Template for Action

During the course of the SES Advisory Committee meetings, Senator Karen Fraser suggested that we try to translate the "big picture" issues into more specific goals (objectives), measurements, and action items.[2] The other committee members agreed that her proposed template was a good approach. The shaded box on the following page describes the basic components of the template.

A Template for Turning Directions into Action

Goals and Objectives:
These are intended to translate one or more of the guiding principles into specific milestones/directions that, ideally, can be measured.

How Measured:
These measurements would generally be made up of state level indicators. These indictors fall into two major categories:

1. Macro Level Indicators – These are measures of overall performance or trends related to electricity production, use, economics, or impacts. Examples of the type of measurements could include:

- Intensity (kWh/$ of GSP)
- Price (electricity expenditure per household)
- Impacts (CO_2/Mwh)

These types of indicators provide overall information on where the state is headed. They are typically influenced by a wide range of factors many of which are outside the direct influence of the state or other policymakers. Nonetheless, they are important since they provide specific information on state electricity trends. Section 4 illustrates these types of macro-level electricity indicators.

2. Performance Indicators – These are typically a more policy or program specific indicator of performance related to a certain set of policies or actions. For example, a performance indicator for electricity security preparedness might be the percentage of electric utilities with up-to-date security plans or the evaluation results of an emergency simulation exercise.

Action Items:
A large range of implementation methods – legislation, executive action, administrative actions by state agencies, actions by other governmental units, utilities, or the private sector – are available.

CTED's Process and Timeline

Presentation of the Report (February 2003)

Report delivered to the Governor and the Senate and House Energy Committees, followed up by presentations to the Senate and House committees.

Public Outreach (Spring – Winter 2003)

CTED will further develop the SES by presenting the highlights and guiding principles to the public and key organizations throughout 2003. It will develop a public outreach strategy to receive comments and suggestions. CTED will also make extensive use of its website as an outreach tool.

Further Involvement of the Advisory Committee and Interested Parties (Spring – Winter 2003)

CTED will work with advisory committee members and other interested parties to develop action items for two to four goals. Work will be conducted through both electronic means and occasional meetings. A discussion may be convened at the September 2003 Governor's Economic Development Conference focusing on electricity, energy, and economic vitality.

Incorporation of Goals, Measures, and Actions into CTED Work Plan (Ongoing)

As the objectives, measurements, and action items are developed, they will be used to help determine CTED's work plan. The work plan will incorporate the availability of staff and other resources. In order to achieve these goals, CTED will need to collaborate with other state agencies, other units of government, the private sector, utilities, and the general public.

Preliminary Discussion of Goals, Measures, and Actions

As previously noted, there was not sufficient time to fully evaluate detailed objectives, measurements, and actions with the advisory committee, other interests, or the public.

The advisory committee generally agreed on preliminary goals in the following eight areas. They are not sufficiently developed to be considered as final recommendations or actions. As part of each preliminary goal, objectives, measurements/indicators and actions are included as examples of the types of items that might be included in an implementation plan. As noted previously, CTED expects to initially focus on two to four goal areas for further development.

I. Ensure adequate and affordable energy supplies

[Related to Guiding Principles #1, 2, 4, 6, 12]

Because this goal was quite general, some more specific objective areas have been added.

1. Electric utilities adopting and using integrated resource plans
2. Cost-effective conservation
3. Renewable energy development

Possible Measurements/Indicators:

- Reliability and adequacy measures (e.g. reserve margins, loss-of-load probability, etc.)
- Increase in resources actually on-line
- Percentage of low-income household expenditures for basic electricity/energy needs
- Percentage of utility customers in the state who are served by utilities that have developed and implemented their own integrated resource plan or are using an IRP from an organization such as BPA
- Compare state achievements to regional projections (e.g., Northwest Power Planning Council [NWPPC] numbers)
- Use current energy policy performance measure data (percentage of state electricity from non-hydro renewables)

Possible Action Items:

- Support federal funding of bill assistance and weatherization
- Continue state tax credits
- Explore ways to increase cost-based, utility-owned generation
- Examine regulatory processes to ensure that load-serving entities maintain sufficient margins
- Oppose federal efforts to impose standard market design (SMD) on the region
- Enact legislative requirement for reporting/submitting Integrated Resource Planning (IRP) (if completed) to state for summary and roll-up to state level
- Urge NWPPC to reestablish “red book” as an assessment tool
- Urge new rate designs to encourage conservation and efficiency
- Investigate demand management programs and policies
- Investigate setting appliance and equipment efficiency standards where not preempted by federal law
- Support tax incentives for conservation
- Support stable, long-term investments in conservation
- Adopt portfolio standard
- Increase tax incentives for renewables
- Support research and development for renewables
- Increase public sector purchase of renewable energy

II. Develop state policy that represents Washington’s interest on federal and regional issues

[Related to Guiding Principles #3, 11]

Four major objective areas for this are:

1. Limiting the federal role, particularly the Federal Energy Regulatory Commission, in the control of the region’s electricity transmission system – specifically SMD and Regional Transmission Organizations (RTO)
2. Representing the state’s interest in issues regarding the Bonneville Power Administration (BPA) – funding for

transmission upgrades, BPA's financial health, and long-term contracts

3. Tracking federal hydropower relicensing, most particularly those issues related to electricity production from in-state facilities
4. Representing Washington State's interests in federal energy legislation

Possible Measurements/Indicators:

- RTO West, if it goes forward, meets Washington's needs
- SMD is abandoned
- BPA signs long-term contracts that meets the needs of Washington utilities and consumers
- Federal energy legislation does not disadvantage Washington or the Northwest

Possible Action Items

- Coordinate with other states and provinces
- Research implications of national and regional policies
- Utilize Washington representation on the NWPPC

III. Expand Washington's clean energy industry

[Related to Guiding Principle #7]

Possible Measurements/Indicators:

- Number of jobs retained and created in the industry
- Number of new energy ventures encouraged by the state

Possible Action Items:

- Assist with economic development efforts
- Continue existing incentives (e.g., rural development tax credit)
- Promote and create trade opportunities for the clean energy industry
- Perform market research

IV. Implement sustainable energy practices in state government activities

[Related to Guiding Principle #7]

Possible Measurements/Indicators:

- Percentage of state agencies incorporating specific energy efficiency/renewable energy practices in their sustainability plans
- Kilowatt-hours (therms/BTUs) saved at public facilities by energy efficiency measures
- Amount of electricity from renewable energy purchased by state agencies
- Amount of combined/heat and power generated at state facilities

Possible Action Items

- Encourage implementation of agency specific sustainability plans
- Find near-term actions that can be implemented with little or no new state funds

V. Maintain and, as necessary, improve the state's [and the region's] electricity reliability and security

[Related to Guiding Principle # 9]

Possible Measurements/Indicators:

- Reliability data
- Measures of system redundancy
- Industry measures of reliability/adequacy

Possible Action Items

- Support new transmission and transmission upgrades
- Maintain emergency contingency plans and staffing
- Integrate energy and electricity infrastructure in state anti-terrorism planning

VI. Increase opportunities for the public to better understand both electricity and energy issues that affect them. Provide them the ability to contribute to the development and implementation of the state's energy vision.

[Related to Guiding Principle #10]

Possible Measurements/Indicators:

- Outreach events
- Number of participants

- Input received
- Publicity that results in media coverage
- Energy literacy as measured by surveys

Possible Action Items:

- Make presentations at community/business organizations
- Utilize website and e-mail
- Hold community forums
- Develop innovative strategy for obtaining input (deliberative polling, web site input, etc.)
- Implement media outreach plan, including additional board briefings

VII. Reduce the net effects of electricity generation and consumption on the state's air quality, water quality and quantity, fish and wildlife, and greenhouse gas profile

[Related to Guiding Principle #13]

Possible Measurements/Indicators:

- Compare figures to 2002 baseline for each area

Possible Action Items:

- Adopt explicit GHG standards for all new generation
- Fully implement state sustainability executive order
- Adopt air quality standards that apply to temporary generation
- Improve turbine efficiency
- Enact EFSEC environmental standards for new generation

VIII. Better understand and track capital and investment issues as they relate to electricity. Investigate policies/actions other states have undertaken to help maintain or improve electricity capital markets and availability.

[Related to Guiding Principle # 6]

Possible Measurements/Indicators:

- Utility bond ratings (absolute and changes)
- Level of infrastructure investment

Possible Action Items:

- Research actions by other states
- Review data from rating agencies
- Analyze capital investment data (conventional generation, transmission, conservation, renewables)

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[1] For additional information see http://www.governor.wa.gov/quality/quality.htm.

[2] See the November 12, 2002, memorandum from Senator Karen Fraser available at: http://www.energy.cted.wa.gov/

QUESTIONS AND ANSWERS ABOUT WASHINGTON'S ELECTRICITY LANDSCAPE SECTION 4

This section was developed in response to questions from the members of the Energy Strategy Advisory Committee and to questions raised in a report produced in Spring 2001*, Q & A Concerning Impacts of the Current Energy Situation on Washington State's Economy* (available at http://www.energy.cted.wa.gov/Energy%20Q&A.pdf.) This information is intended to help improve our understanding of the energy situation in Washington State, particularly in light of events that occurred during 2000/2001 as a result of the West Coast electricity and energy crisis.

The information is organized in four sections: the electricity/energy crisis, economic impacts of the crisis, electricity and natural gas consumption, and energy policy issues.

Each section contains indicators that illustrate a key issue and help to tell the story of the electricity landscape in Washington. These indicators are also examples of how the Department of Community, Trade and Economic Development (CTED) Energy Policy Division and other areas of state government can track and measure the achievement of the goals and objectives that emerge from the State Energy Strategy process.

The state energy indicators presented in this section differ from those included in the 1999 and 2001 Biennial Energy reports. These indicators focus on electricity, while the state indicators provide a view of Washington's overall energy landscape. The state indicators are in the process of being updated and will be posted on the CTED Energy Policy website.

The information is presented in a question and answer format. The following questions are considered:

Section 4-1: The Electricity/Energy Crisis

1. What was the impact of the drought on electricity supply?
2. What new electricity generation capacity has been added in Washington?
3. What is the electricity flow into and out of the region?
4. What happened to *wholesale* energy prices in Washington?

Section 4-2: Economic Impacts of the Crisis

5. How have retail natural gas and electricity rates in Washington changed as a result of the West Coast energy crisis?
6. As a result of the West Coast energy crisis, how do energy prices in Washington compare to other states?
7. How do retail electricity and natural gas rate increases affect Washington's "average" household and commercial business?
8. What is the relation of utility costs to household income?
9. What is the credit status of electric utilities in Washington?

Section 4-3: Electricity and Natural Gas Consumption in Washington

10. Where is growth occurring in electricity consumption in the state?

11. How does growth in electricity consumption and expenditures relate to other economic indicators?

12. Where is growth occurring in natural gas consumption in the state? Is there any evidence of increasing consumption for electricity generation?

Section 4-4: Policy Issues and Indicators

13. What is the mix of utility types in Washington?

14. How does new generation influence the diversity of generation in the state?

15. What is happening with the region's transmission system?

16. What is the impact of energy consumption in Washington on the production of greenhouse gases?

17. What is the level of energy conservation savings achieved in Washington?

18. What percentage of the electricity consumed in Washington is produced from non-hydroelectric renewable energy sources?

Each question is followed by a brief summary response, a description of the data (indicators) presented, and a series of annotated figures or tables responding to the question.

Section 4-1: The Electricity/Energy Crisis

The West Coast electricity/energy crisis that began late in 2000 and continued through most of 2001 government, utilities, businesses, and consumers came suddenly and had a significant impact on the state's utilities, consumers, and economy. Many factors contributed to this crisis including electricity market restructuring in California, market manipulation by some suppliers, and the drought in the Northwest. They combined to limit available electricity supplies and produce very volatile electricity markets. Four indicators illustrate the situation in the Northwest and Washington:

- the impact of the drought on electricity supply;
- new electricity capacity additions;
- flow of electricity into and out of the region (U.S. portion of the NW Power Pool); and
- wholesale energy prices in Washington.

The drought during this period significantly reduced hydroelectric supply, the primary source of electricity in the region. This limited available electrical energy in the Northwest and on the West Coast. While Washington has been adding modest amounts of generating capacity over the last 20 years to keep up with growth in electricity demand, there was not enough new or reserve capacity to fully mitigate the impact of the crisis.

The Northwest typically exports electricity to other areas, but during the crisis the amount of exports began to decline and the region imported power during the winter of 2001. In addition, wholesale electricity and natural gas prices were very volatile, increasing significantly beginning in late 2000 through mid-2001. The impact of these high prices is described in Section 4-2.

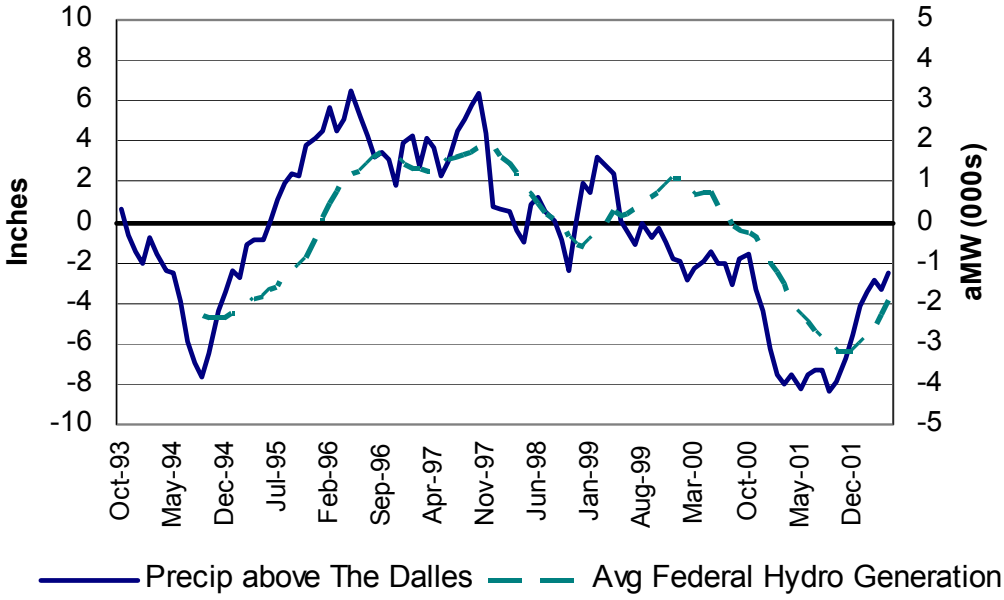
1. What was the impact of the drought on electricity supply?

Hydroelectric supply dropped significantly due to the drought. The electricity available from the hydroelectric system is dependent on regional precipitation and snow pack. The total supply of electrical energy available varies significantly depending on these factors. At the height of the drought, annual production on the federal hydro system was more than 30 percent below the historical average.

Indicator:

Variation in Federal Columbia River Power System (FCRPS) hydroelectric production relative to precipitation above The Dalles. [source: Bonneville Power Administration (BPA)]

Figure 4.1 Variations in NW Precipitation and Hydro Generation



Hydro generation production varies significantly depending on precipitation in the region. Generation capacity on the federal hydro system was 10 to 20 percent above normal during a relatively wet period in 1996 and 1997, but dropped 30 percent below normal by late 2001. For Washington, hydro generated electricity serving Washington consumers (which includes a portion of federal hydro generation plus other sources) dropped more than 30 percent from 2000 to 2001, which is equivalent to a decline in hydro generation capacity of 2,500 aMW.

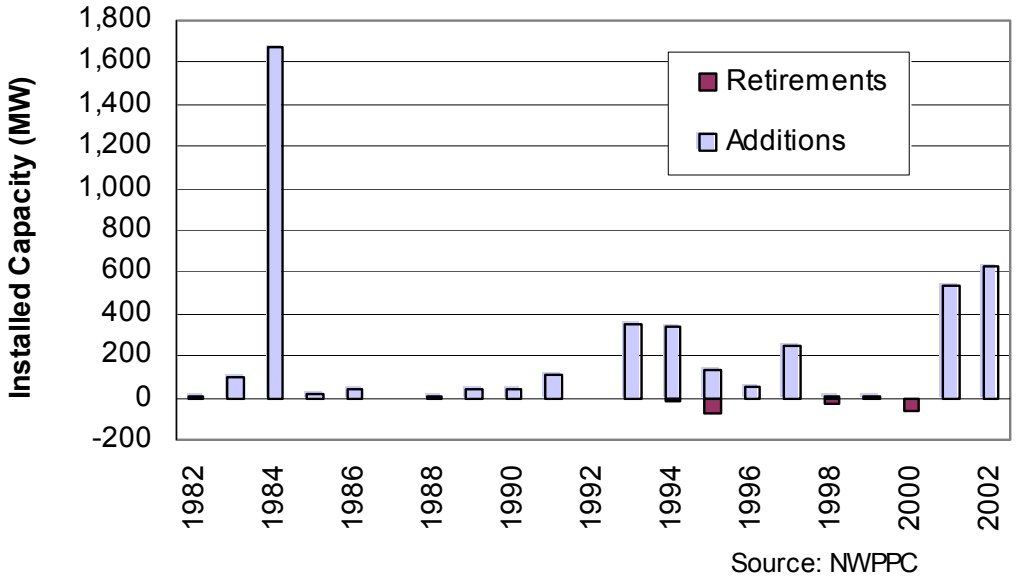
2. What new electricity generation capacity has been added in Washington?

Modest additions to generation capacity in Washington have been made in the last 20 years with the exceptions of 1984 when the Columbia Generating Station at Hanford came on line and 2001 and 2002 when more than a quarter of the total capacity added during this period came on line. At the same time, electricity load growth in Washington has been modest during this period and capacity additions have generally kept up with load growth.

Indicator:

Additions and retirements of electricity generation capacity in Washington for the last 20 years. Generation is shown in terms of installed capacity in Megawatts (MW). The actual production from a generation plant may be less than its installed capacity. [source: Northwest Power Planning Council (NWPPC)]

Figure 4.2 Washington Generation Additions and Retirements



A little more than 4,000 MW of electricity generating capacity has been added in Washington State in the last 20 years. Almost 40 percent of this capacity was added in 1984 when the Columbia Generating Station at Hanford came on line. Most of the remainder was added in the mid-1990's and in 2001 and 2002. These last two years account for a little more than a quarter of the total capacity additions. This does not include temporary diesel generators that were briefly operated during this period, but it does include several permanent diesel generators installed in 2001 to meet peak loads. During this period, electric load growth in Washington averaged less than two percent per year and the modest capacity additions in the state have kept up with this load growth. However, Washington is part of a regional electricity system. Whether this system has adequate capacity must be determined on a regional basis.[1] Also, the recent economic downturn has resulted in a significant decline in industrial electricity loads. As the economy recovers, growth in electricity use is likely to increase.

[1] See the Northwest Power Planning Council's analysis of regional electricity supply adequacy at http://www.nwcouncil.org/library/releases/2002/1211.htm

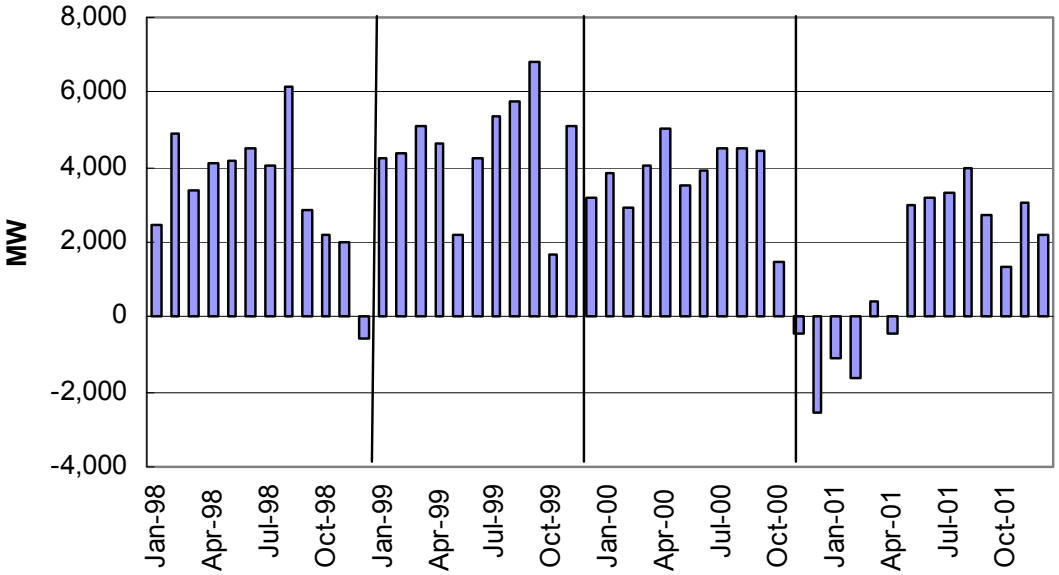
3. What is the electricity flow into and out of the region?

The Northwest Power Pool (NWPP)[2] is a net exporter of power during much of the year, although this changed in early 2001.

Indicator:

Net firm transfers of power from 1998 to 2001 for the U.S. portion of the NWPP. [source: NWPP]

Figure 4.3 Northwest Power Pool Net Firm Transfers 1998-2001



Over the last several years, the U.S. portion of the NWPP has been a net exporter of power (positive values in the figure). In 2000, the magnitude of exports began to decline and the region imported power during the winter of 2000/2001. Exports during the remainder of 2001 were somewhat less than previous years.

[2] NWPP area is comprised of all or major portions of the states of Washington, Oregon, Idaho, Wyoming, Montana, Nevada, and Utah, a small portion of Northern California, and the Canadian provinces of British Columbia and Alberta.

4. What happened to *wholesale* energy prices in Washington?

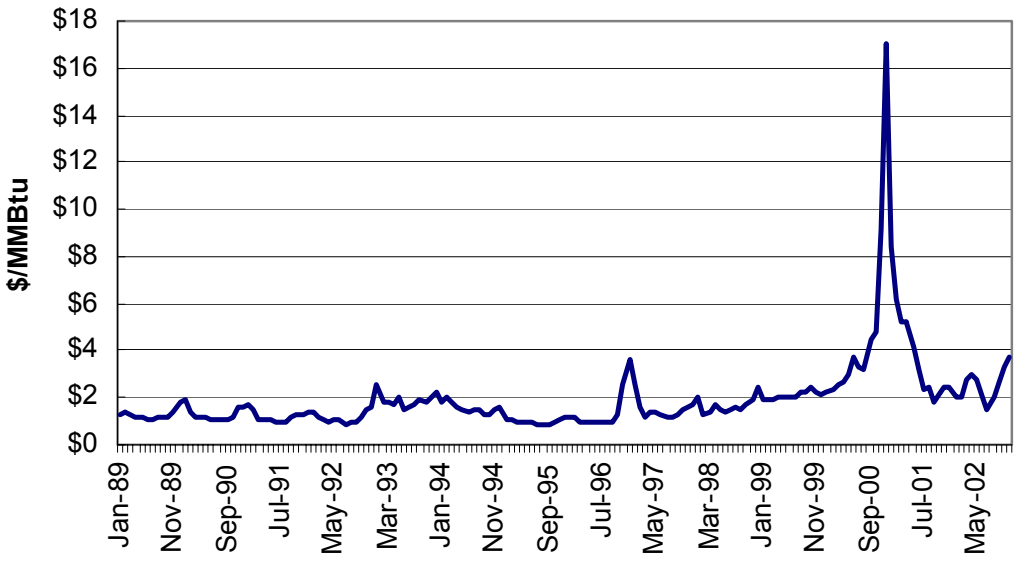
Wholesale energy prices on the spot market for electricity and natural gas increased significantly beginning in late 2000 through mid-2001. By late 2001, these prices returned to pre-crisis levels and spot market electricity prices for the first three-quarters of 2002 were generally below historical levels. Some utilities, such as BPA, which were exposed to high market purchase prices hoped to improve their financial situation by selling surplus electricity to the market as water conditions improved in late 2001/2002. Ironically, because spot prices fell at the same time, surplus sales revenue did not meet original projections.

It is important to recognize that spot electricity markets are a relatively small portion of the total electricity market. (See Figure 4.7, "Washington State Electricity Consumption") Those utilities or consumers most exposed to spot market prices were most impacted by the increase in these prices.

Indicators:

- Historical monthly average natural gas spot prices at the Sumas, Washington hub. [source: Natural Gas Week]
- Wholesale monthly volume-weighted average spot market electricity prices at the mid-Columbia hub. [source: Dow Jones]
- Wholesale daily peak market electricity prices at the mid-Columbia hub. [source: Dow Jones]
- Washington electricity consumption compared to mid-Columbia volumes. [source: Dow Jones and Energy Information Administration (EIA)]

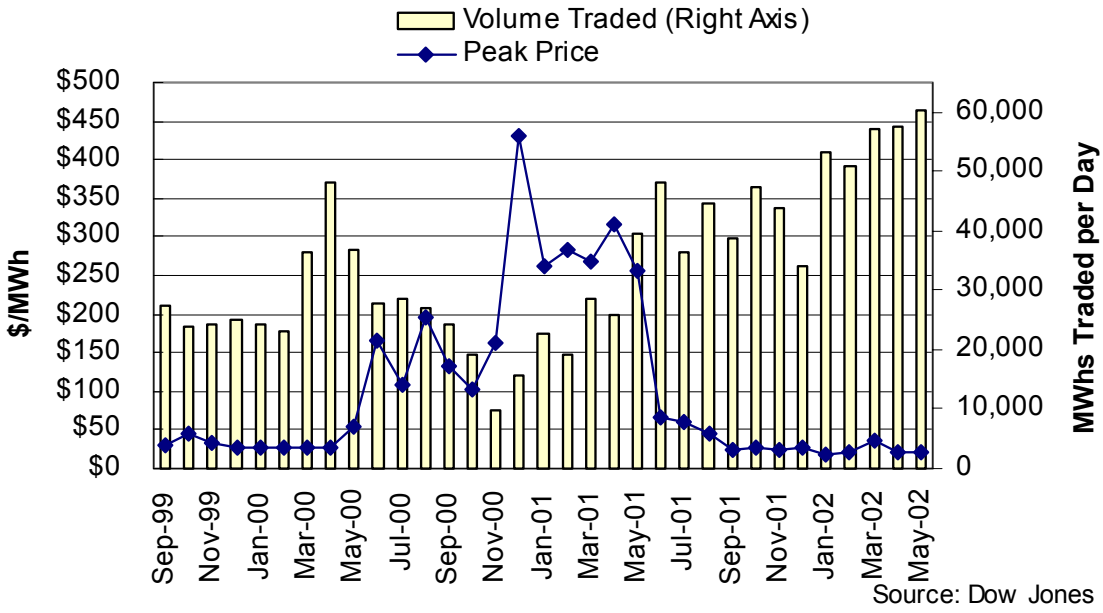
Figure 4.4 Monthly Average Natural Gas Spot Price
Delivered to Pipeline at Sumas, WA



Source: Natural Gas Week

Historical natural gas spot market prices at Sumas have been less than $2/mmBtu. Prices began to rise above this level in early 2000, peaking in December 2000. By September 2001 prices were nearing the $2/mmBtu level, but by late 2002 had increased to more than $4.00/mmBtu.

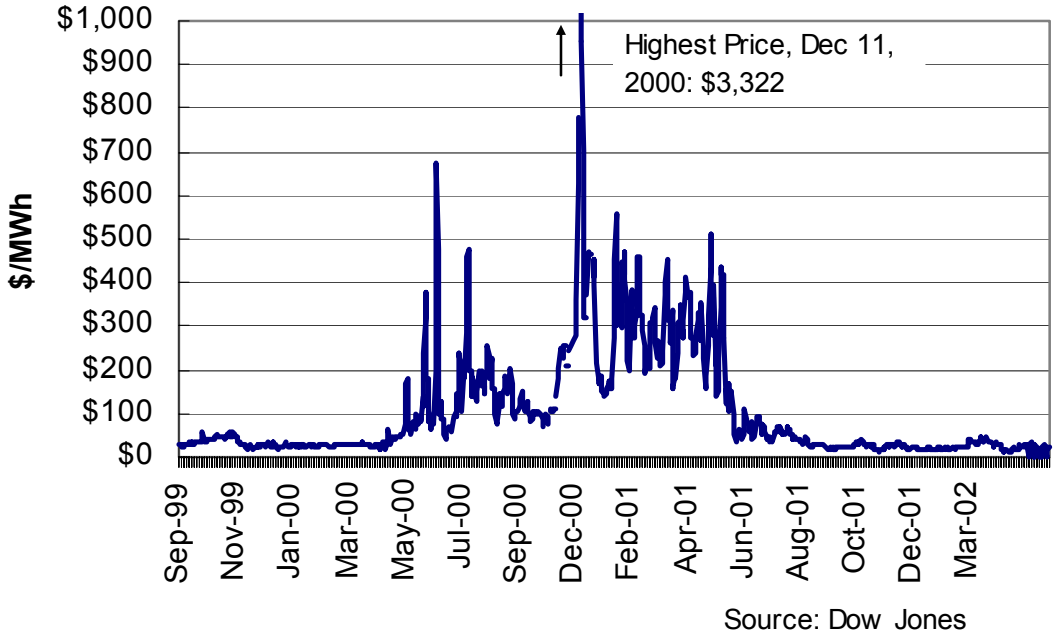
Figure 4.5 Monthly Spot Market Power Prices at Mid-Columbia
Monthly Volume-Weighted Averages



Source: Dow Jones

In mid-2000 monthly (volume-weighted average) spot market electricity prices at the mid-Columbia hub began to climb, peaking in January 2001. Peak values were more than an order of magnitude higher than historical prices. The volume of sales declined significantly during the period of high prices. By September 2001 prices had returned to historical levels and prices in mid-2002 even dropped below this level.

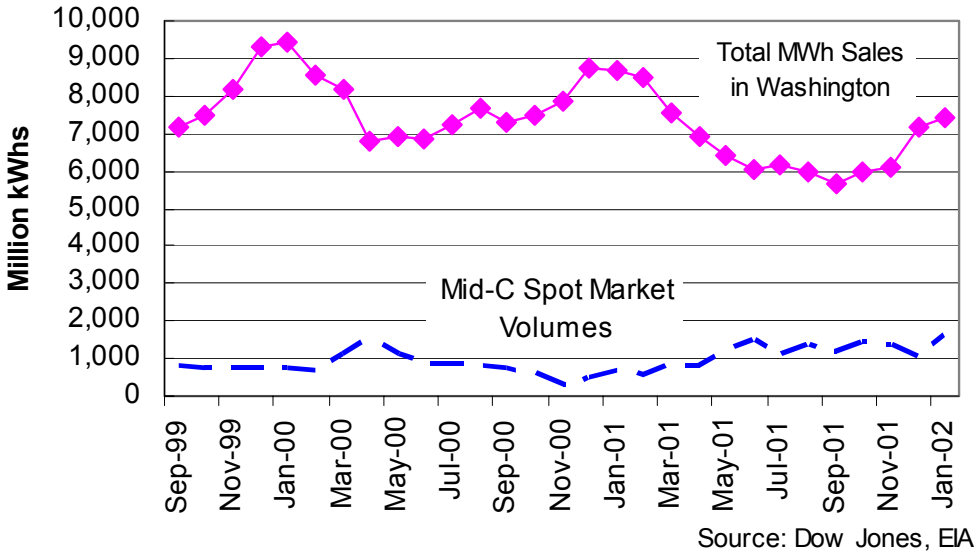
Figure 4.6 Daily Spot Market on-Peak Firm Electricity Prices at Mid-Columbia
September 1999 – June 2002



Source: Dow Jones

Daily peak spot market electricity prices at the mid-Columbia hub experienced even greater volatility than monthly prices from mid-2000 until late summer 2001. The peak price of $3,322/MWh on December 11, 2000, was 100 times historical average prices. But by late 2001 and early 2002 prices returned to historical or below historical averages. Recent volatility has been less than during the crisis period, but somewhat greater than historic norms.

Figure 4.7 Washington State Electricity Consumption and Mid-Columbia Volumes Traded



The volume of electricity sales at the mid-Columbia hub is small relative to the total electricity sales in Washington State. Only a portion of the sales made at the mid-Columbia hub are for customers in Washington State. Spot markets are only a small fraction of the total electricity market.

Section 4-2: Economic Impacts of the Crisis

The dramatic increase in wholesale electricity and natural gas prices during the electricity/energy crisis had a significant impact on most of Washington's utilities and the prices they charge. Even though most utilities relied on wholesale electricity markets for only a small portion of their electricity needs, the order of magnitude increase in wholesale electricity costs dramatically increased their total costs for electricity. Those utilities that relied the most on wholesale electricity markets for power experienced the largest impact. These higher costs were eventually passed on to their customers. In this section we consider five indicators of the economic impacts of the crisis on Washington consumers and utilities:

- changes in retail natural gas and electricity rates;
- comparison of Washington's natural gas and electricity prices to other states;
- changes in the average household and commercial business natural gas and electricity bill;
- relationship of utility costs to household income; and
- credit status of Washington's electric utilities.

In 2001 and 2002, retail electricity prices experienced their most significant increase since the early 1980's (when prices increased due to the Washington Public Power Supply System (WPPSS) nuclear plant bond default). Residential and commercial prices were approximately 20 percent higher and industrial prices were almost 50 percent higher. Historically, Washington has had some of the lowest electricity prices in the nation, but now almost 20 states have lower average industrial and commercial electricity prices. However, these average numbers do not reflect the fact that some utilities, especially those with sufficient generating capacity to meet all of their obligations, experienced little or no price increases.

Likewise, natural gas prices were 40 to 60 percent higher in 2001 than in 1999. Unlike electricity, where some utilities did not experience large cost increases, all gas utilities in Washington saw significant increases. These higher prices translate into higher electricity and natural gas bills for Washington consumers. Low-income households in Washington are on average paying more than 5 percent of their income to meet their household energy needs (excludes transportation).

The energy crisis also has had a negative impact on the financial stability of Washington's electric utilities. Many Washington electric utilities have experienced credit downgrades and several of the major utilities have negative outlooks from Standard and Poor's. While all but one still have investment grade bond ratings, this situation can reduce utility access to affordable capital to make needed investments to the electricity system in Washington.

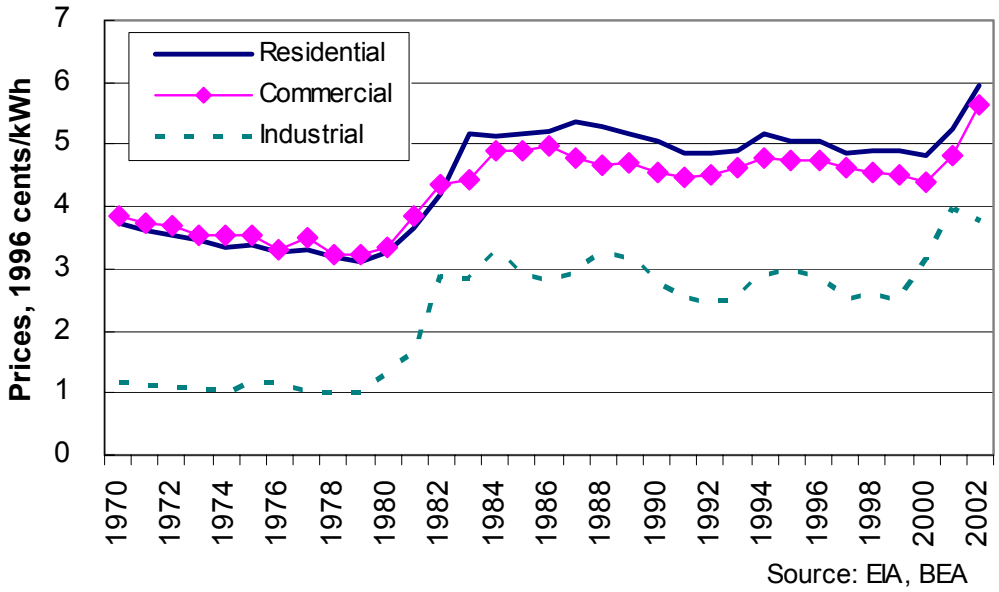
5. How have retail natural gas and electricity prices in Washington changed as a result of the west coast energy crisis?

Average retail residential and commercial electricity prices have increased approximately 20 percent since 1999 and industrial prices increased almost 50 percent. Natural gas prices for residential and commercial consumers increased about 60 percent from 1999 to 2001, while those for industrial consumers increased more than 40 percent.

Indicators:

- Average real retail electricity price trends by sector. [source: EIA and U.S. Department of Commerce Bureau of Economic Analysis]
- Average real retail natural gas price trends by sector (Natural gas prices for 2002 and 2001 (except residential) are not available.) [source: EIA and U.S. Department of Commerce Bureau of Economic Analysis]

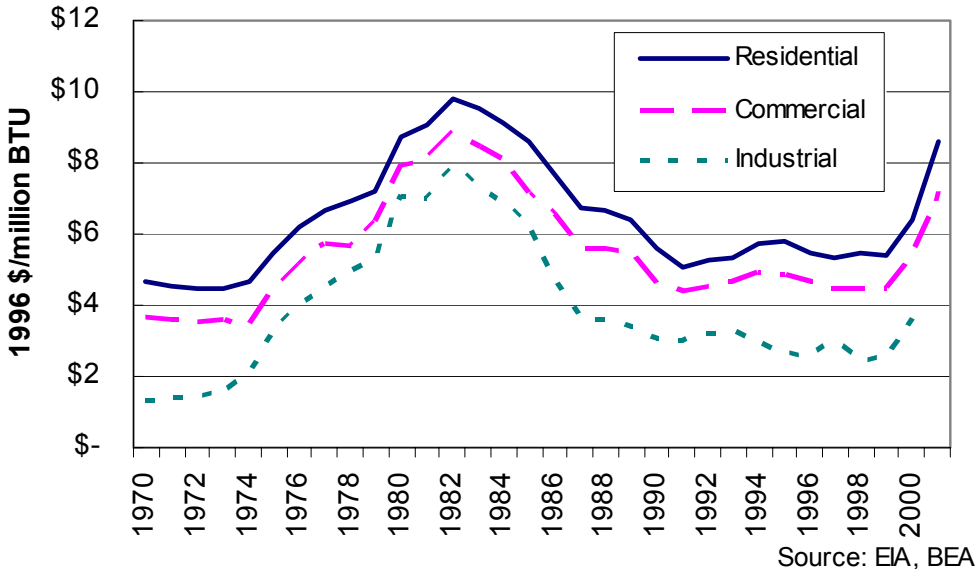
Figure 4.8 Washington Retail Electricity Prices by Sector



Note: 2002 values are year-to-date through June. Values for 2001 and 2002 are estimates and may be revised.

Inflation-adjusted average retail electricity rates have been relatively stable in Washington since the last significant increase in prices in the late 1970's and early 1980's. But prices began to increase for industrial consumers in 2000 and for residential and commercial consumers in 2001. Price increases were most dramatic for industrial customers rising more than 50 percent from 1999 to 2001 before dropping slightly in 2002. The increase in residential and commercial prices from 1999 to 2002 was 20 and 24 percent respectively (inflation adjusted).

Figure 4.9 Washington Retail Natural Gas Prices by Sector



After peaking in the early 1980's, inflation-adjusted retail natural gas prices declined through the late 1990's. Beginning in 2000, prices began to rise due to constrained natural gas capacity and increased demand. From 1999 to 2001, residential natural gas prices increased more than 60 percent and commercial prices increased by more than 70 percent. Industrial prices climbed by more than 40 percent from 1999 to 2000 (2001 values are not currently available). Comparable data for 2002 are not yet available, but natural gas prices have been falling recently.

6. As a result of the West Coast energy crisis, how do energy prices in Washington compare to other states?

Washington's relative advantage as a low-cost electricity state has been declining. In 1999, Washington had the lowest electricity prices for residential and industrial consumers and the next to lowest commercial prices. By 2002, nearly 40 percent of the states had lower commercial and industrial electricity prices and 15 percent had lower residential prices. Washington's relative ranking for natural gas prices changed from slightly lower prices than average for the commercial and residential sectors to prices that were similar to the U.S. average. Washington industrial natural gas prices were among the lowest in 1999. A few more states had lower prices in 2000 and data are not yet available for 2001.

Indicators:

- Washington's ranking for retail electricity prices by sector relative to other states. [source: EIA]
- Washington's ranking for retail natural gas prices by sector relative to other states (prices are not available (na) for 2002 and for the industrial sector in 2001.) [source: EIA]

Table 4.1 Washington State Ranking - Retail Electricity Prices

	YTD 2002	2001	2000	1999
Residential	*44*	*49*	50	50
Commercial	*32*	*47*	49	49
Industrial	*33*	*34*	45	50

Washington State Ranking - Retail Natural Gas Prices

	YTD 2002	2001	2000	1999
Residential	na	*26*	37	35
Commercial	na	*23*	34	33
Industrial	na	na	42	46

50 = lowest, 1 = highest, Numbers in italics are estimates, na- not available

7. How do retail electricity and natural gas price increases affect Washington's "average" household and commercial business?

Estimated average monthly electricity bills have increased about 30 percent for residential and commercial consumers from 1999 to 2001. Estimated natural gas bills increased by over 60 percent for residential consumers and over 70 percent for commercial consumers from 1999 to 2001 (2002 data are not available).

Indicators:

- Average household and business electricity expenditures for 2002 and 1999 (these estimates assume the same level of consumption in 2002 and 1999 and do not account for inflation.) [source: EIA]
- Average household and business natural gas expenditures for 2001 and 1999 (these estimates assume the same level of consumption in 2001 and 1999 and do not account for inflation.) [source: EIA]

Table 4.2 Average Household and Business Utility Expenditures

Electricity Expenditures	1999	2002 Estimated	Difference
Annual expenditures per residential customer	$ 700.06	$ 889.08	$ 189.02
Monthly expenditures per residential customer	$ 58.34	$ 74.09	$ 15.75
Annual expenditures per commercial customer	$ 4,593.69	$ 6,063.67	$ 1,469.98
Monthly expenditures per commercial customer	$ 382.81	$ 505.31	$ 122.50

Natural Gas Expenditures	1999	2001 Estimated	Difference
Annual expenditures per residential customer	$ 541.13	$ 898.28	$ 357.15
Monthly expenditures per residential customer	$ 45.09	$ 74.86	$ 29.76
Annual expenditures per commercial customer	$ 3,063.15	$ 5,391.15	$ 2,328.00
Monthly expenditures per commercial customer	$ 255.26	$ 449.26	$ 194.00

The average residential household saw their monthly electricity bill increase about $16/month from 1999 to 2002 and their monthly natural gas bill increase about $30/month from 1999 to 2001. The average commercial business saw their monthly electricity bill increase a little more than $120/month and their natural gas bill increased a little more than $190/month.

Note. These values represent **statewide averages** and do not reflect the wide range of retail electricity price increases for the state's utilities ranging from less than 5 percent to more than 50 percent. In addition, retail natural gas rates have declined significantly in 2002.

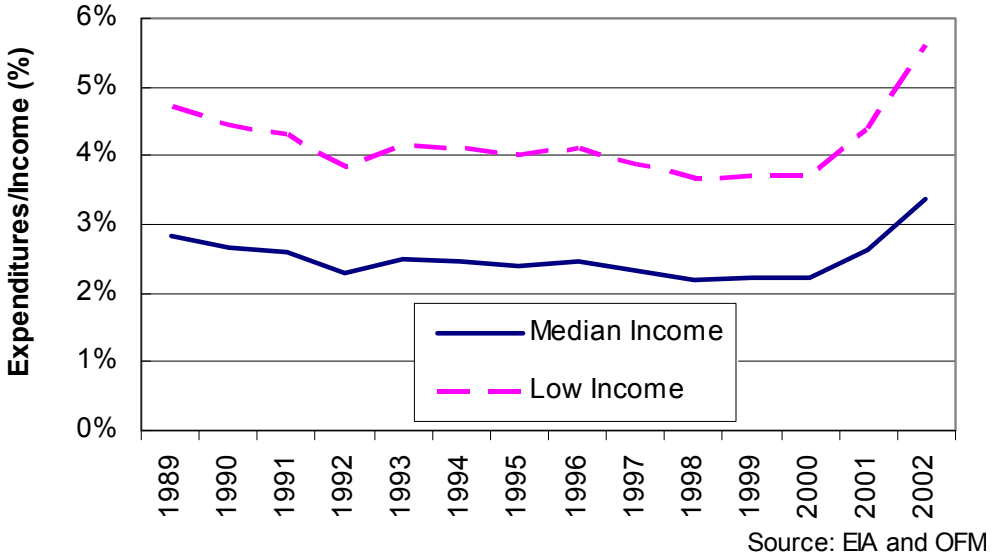
8. What is the relation of utility costs to household income?

Recent rapid increases in electricity and natural gas costs mean that households are paying a larger portion of their income for energy. This impacts low-income households the most, which on average are now paying more than 5 percent of their incomes on energy.

Indicator:

Washington household energy expenditures (this excludes energy expenditures for transportation) as a fraction of household median income. Low-income households are defined as 60 percent of median income. [source: EIA and Washington State Office of Financial Management.]

Figure 4.10 Energy Expenditures as a Fraction of Household Income



Note: Values for 2000, 2001, and 2002 are estimates.

Household energy expenditures as a fraction of median household income declined slightly during the period from 1989 through 2000. However, electricity and natural gas price increases in 2001 and 2002 have resulted in energy costs accounting for a higher percent of household income. This impacts low-income households the most. In 2002, low-income households earning 60 percent of the household median income on average paid over five and a half percent of their income on energy. This increases the need for energy assistance in these households.

9. What is the credit status of electric utilities in Washington?

Uncertainties in the utility industry and negative financial conditions have resulted in credit downgrades and negative outlooks for some utilities in the state. This increases the cost of capital, making it more difficult for utilities to make needed infrastructure investments.

Indicator:

Standard & Poor's credit ratings and outlook for the 10 electric utilities tracked in Washington. [source: Standard and Poor's Utility Credit Ratings]

Table 4.3

WA Electric Utilities	Rating	Outlook
Avista Corp.	BB+	Stable
Chelan County PUD #1	AA-	Stable
Clark County Public Utility District #1, WA	A	Stable
Douglas County PUD #1	AA	Stable
Grant County PUD #2	AA-	Stable
PacifiCorp	A-	Negative
Puget Sound Energy Inc.	BBB-	Stable
Seattle City Light	A	Negative
Snohomish County Public Utility District #1, WA	A+	Stable
Tacoma Power	A+	Negative

All the Washington electric utilities tracked by Standard & Poor's have investment grade credit ratings (BBB or better) except Avista Corporation, although Puget Sound Energy is barely maintaining an investment grade rating. As of October 2002, half of the utilities had a negative outlook, suggesting that there is potential for their financial outlook and credit rating to deteriorate further. The remaining five (all public utilities) had stable outlooks and A or better ratings. Since October, Avista Corporation and Puget Sound Energy had their outlook upgraded to stable.

The situation in Washington reflects the utility industry nationally. In the third quarter of 2002, there were 57 credit downgrades of utility holding companies and their operating subsidiaries, compared with just eight upgrades. At the end of September 2002, 11 percent of the industry had a credit rating below investment grade and 49 percent had a BBB rating. This compares to 5 percent and 40 percent a year ago[3].

[3] From "Downward Credit Pressure Continues on U.S. Power Industry," Standard & Poor's Ratings Direct, October, 11, 2002.

Section 4-3: Electricity and Natural Gas Consumption in Washington

A key aspect of understanding the electricity situation in Washington is to consider growth in electricity consumption. This study uses two indicators: the historical trend in electricity use by sector and the relation between electricity consumption and expenditures to economic activity in the state.

Electricity use in Washington has been growing modestly over the last 20 years at an average annual rate of less than two percent, but in the last several years industrial use has declined by almost a third. Electricity expenditures relative to Washington's gross state product have declined steadily since the early 1980's. Likewise, commercial and industrial energy consumption per employee has declined significantly in the last ten years. These trends reflect a shift to less energy intensive businesses and industries.

Electricity and natural gas consumption and costs are closely related because natural gas-fired generation plants are a key source of new generation capacity in Washington. To illustrate this we have developed an indicator that shows historical natural gas use by sector including natural gas use for electricity generation. Since the early 1980's natural gas consumption has tripled, with growth in industrial consumption leading the way. But in the last several years, there has also been a large increase in natural gas use for electricity generation, which now accounts for almost a quarter of total natural gas consumption.

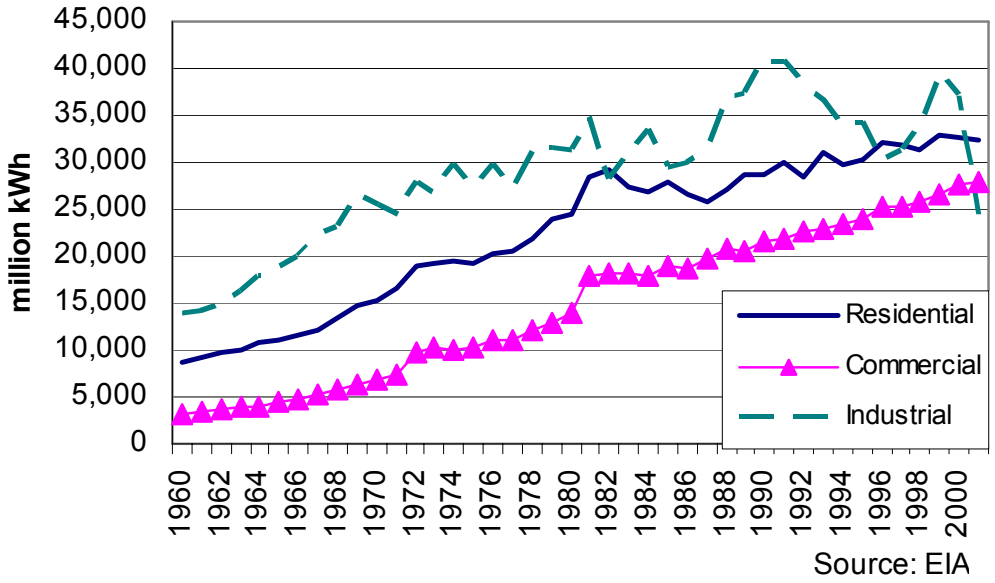
10. Where is growth occurring in electricity consumption in the state?

Historically, electricity use in Washington State has been growing, but recently industrial use has declined while residential and commercial use has remained relatively constant.

Indicators:

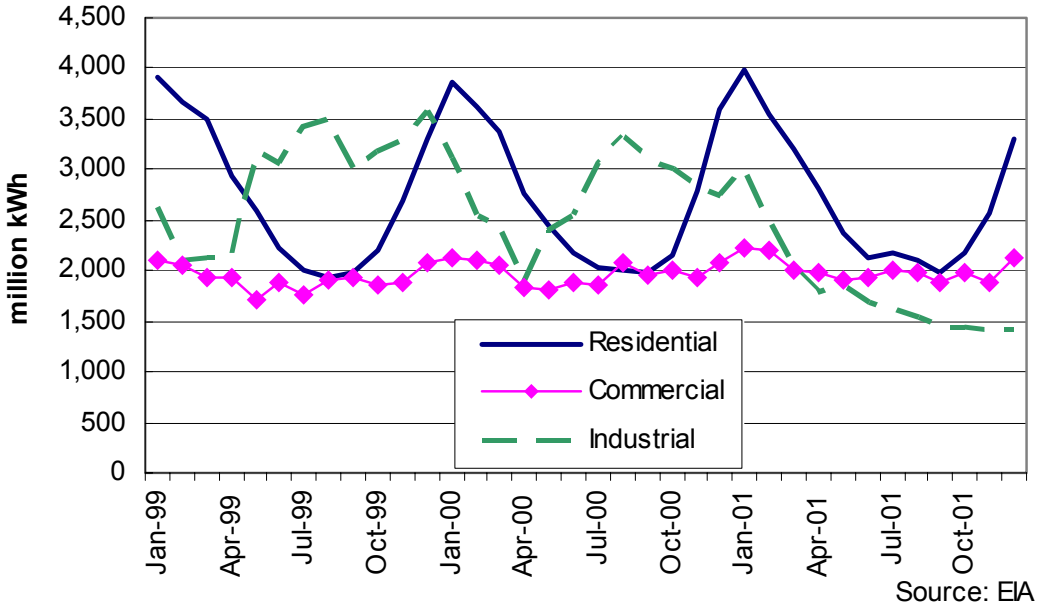
- Historical annual electricity consumption in Washington State by sector. [source: EIA]
- Recent monthly electricity consumption in Washington State by sector. [source: EIA]

Figure 4.11 Washington Historical Electricity Consumption by Sector



Electricity consumption in Washington has grown steadily over the last several decades and by 1999 was almost four times greater than in 1960. But this growth in overall electricity use reversed in 2001 due to a significant decline in industrial electricity use. The industrial sector accounted for the largest share of consumption from 1960 to 1999, but over the last decade consumption in the sector has varied by almost 25 percent. The recent decline in consumption is largely due to the shutdown of aluminum smelters in Washington. In 2001, the residential sector had the highest level of electricity consumption, accounting for a little more than a third of total electricity consumption, with the commercial sector accounting for a third of consumption, and the industrial sector a little less than a third.

Figure 4.12 Washington Monthly Electricity Retail Sales by Sector



Source: EIA

Monthly residential and commercial electricity consumption over the last several years shows similar patterns and levels of use. Residential monthly electricity consumption peaks in the winter months reflecting increased use for space heating, while commercial use is relatively steady throughout the year. Industrial electricity use tails off significantly in 2001, mostly due to the shutdown of aluminum smelters in the state. As a result, annual electricity consumption in 2001 for both the residential and commercial sectors exceeds industrial use for the first time.

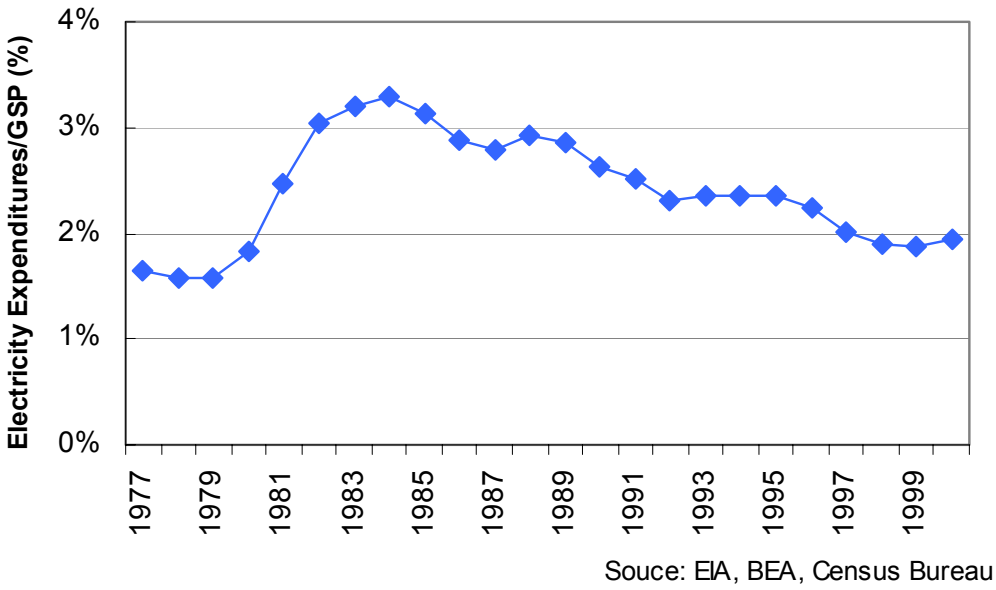
11. How does growth in electricity consumption and expenditures relate to other economic indicators?

Historically, electricity expenditures and consumption have been declining relative to gross state product and employment.

Indicators:

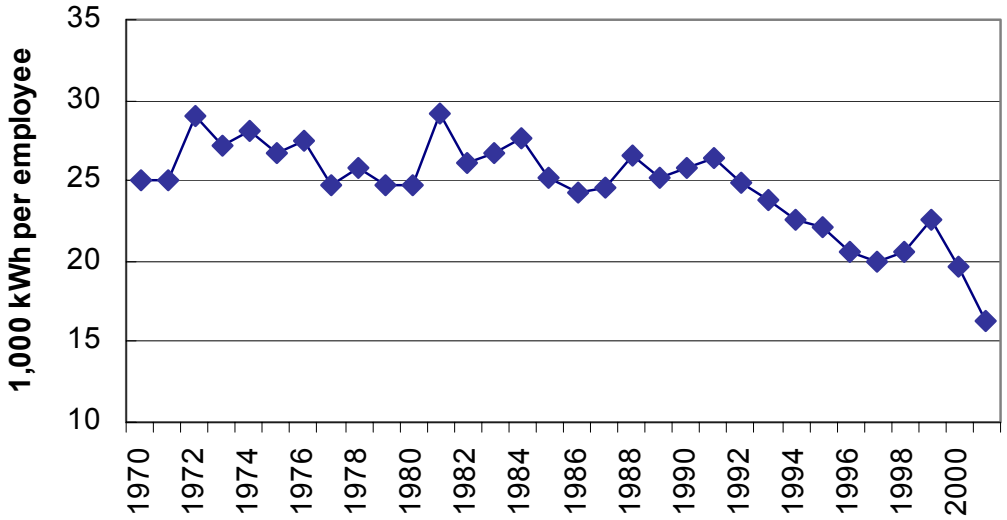
- Historical Washington State electricity expenditures per gross state product. [source: EIA, U.S Department of Commerce Bureau of Economic Analysis, and U.S Census Bureau]
- Historical Washington State commercial and industrial electricity use per employee. [source: EIA, Washington State Department of Employment Security]

Figure 4.13 Electricity Expenditures per Dollar of Washington Gross State Product



Electricity expenditures per dollar of Washington State gross state product grew in the late 1970's and early 1980's, largely due to significant electricity price increases during this period. But energy expenditures per GSP declined steadily from the peak in 1984 through 1999. This was due in part to relatively stable electricity prices during this period while the economy continued to grow. It also may reflect shifts in the economy to less energy intensive industries and services. Recent increases in electricity prices are likely to reverse the downward trend in energy expenditures per GSP.

Figure 4.14 Energy Intensity: Electricity Consumption and Employment



Note: Based on electricity consumption data for commercial and industrial sectors only

Source: EIA, ESD

Electricity consumption in the commercial and industrial sectors relative to state employment has declined fairly significantly in the last ten years. This likely reflects a shift to less energy intensive industries.

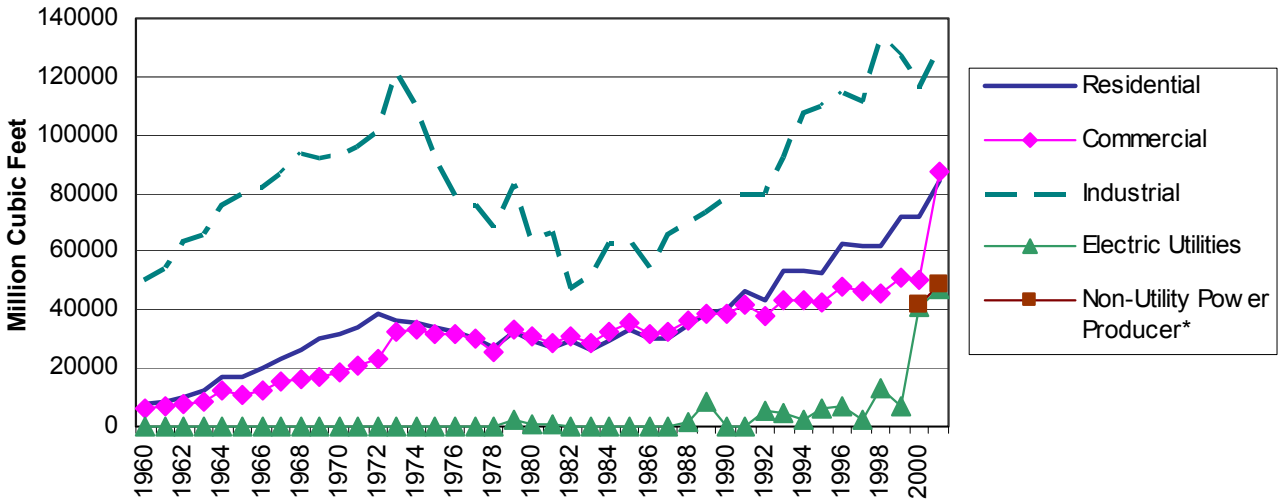
12. Where is growth occurring in natural gas consumption in the state? Is there any evidence of increasing consumption for electricity generation?

Total natural gas consumption in Washington State has tripled since the early 1980's. In the last several years, an increase in the use of natural gas for electricity generation has contributed to this increase.

Indicators:

- Historical Washington State natural gas consumption by sector including use for electricity generation. [source: EIA]
- Historical natural gas deliveries to electric power generators in Washington. [source: EIA]

Figure 4.15 Washington Historical Natural Gas Consumption by Sector

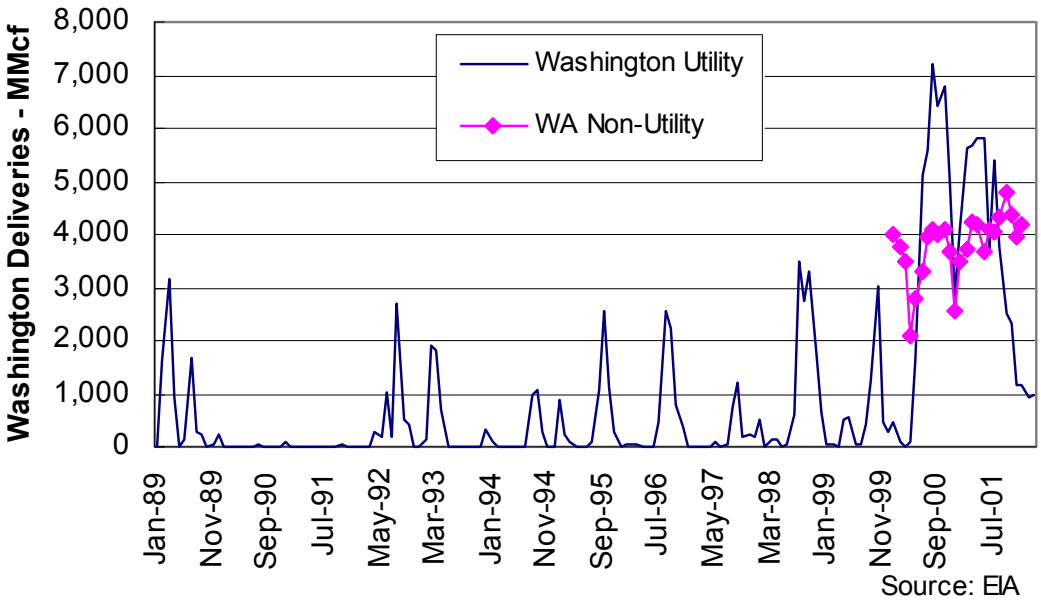


Source: EIA

*Note: Data for non-utility generators is only available for 2000 and 2001.

Natural gas consumption in Washington State has grown significantly since the early 1980's and is now more than three times greater than the value in 1982 and 1983. Currently industrial consumption accounts for about a third of total use and residential and commercial use account for a little more than 20 percent of total use each. Electricity generation accounts for almost a quarter of use. Natural gas use by utilities for electricity generation was seven times greater in 2001 than in 1999. Consumption of natural gas by non-utility generators also likely grew during this period, but data are not available prior to 2000.

Figure 4.16 Natural Gas Deliveries to Electric Power Generators in Washington



*Note: Data for non-utility generators is only available for 2000 and 2001.

Historically, electric utilities have used natural gas-fired power plants largely for use during periods of peak demand or when adequate supplies were not available from other sources. During the last several years, the use of natural gas for electricity generation has grown. Data for natural gas use by non-utility generators is not available prior to 2000, although generation from these sources has mostly occurred in recent years.

Section 4: Energy Policy Issues and Indicators

The recent West Coast energy crisis and the state energy strategy review process have raised a number of important energy policy issues related to the electricity situation in Washington. This section considers six indicators to illustrate some of these policy issues:

- mix of utility types in Washington;
- diversity of new electricity generation;
- transmission line construction;
- impact of energy use on the production of greenhouse gases;, the level of energy conservation savings; and
- percentage of electricity consumed in Washington that is produced from renewable sources.

A unique aspect of the electric utility industry in Washington relative to most states is that publicly-owned utilities account for more than half of Washington State's customers and electricity sales to end-users. This has energy policy implications because these public utilities are accountable to locally elected boards rather than the state utility commission. Almost all of the new electricity generation in Washington is produced from natural gas power plants. While this diversifies our existing mix of generation, we are dependent on one fuel source for our new generation. Transmission line construction has been minimal since 1987. The consumption of fossil fuels (primarily petroleum for transportation) is the primary source of greenhouse gases in Washington, although electricity generation from fossil fuel sources (particularly coal) is a significant contributor. Savings from energy efficiency programs have gone up and down over the last 20 years. After reaching a high in 1993, savings declined over 70 percent by 1999, before approaching the historical high in 2001. Only a very small fraction (less than 2 percent) of the electricity provided to Washington consumers by electric utilities was generated from renewable energy sources (biomass, geothermal, wind, or solar).

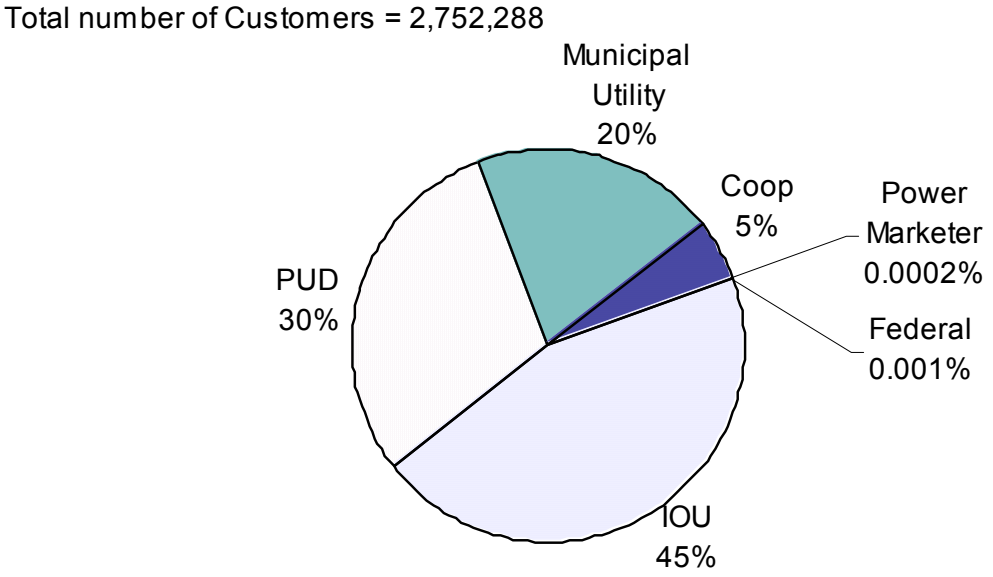
13. What is the mix of utility types in Washington?

Publicly-owned utilities account for more than half of Washington State's customers and electricity sales to end-users. These utilities are accountable to locally elected boards rather than the state utility commission. Washington State has 63 electric utilities whose customers range from a few hundred customers to more than 800,000.

Indicators:

- Washington State utility customers in 2000 by type of ownership. [source: EIA]
- Washington State utility electricity sales to end-users in 2000 by type of ownership. [source: EIA]

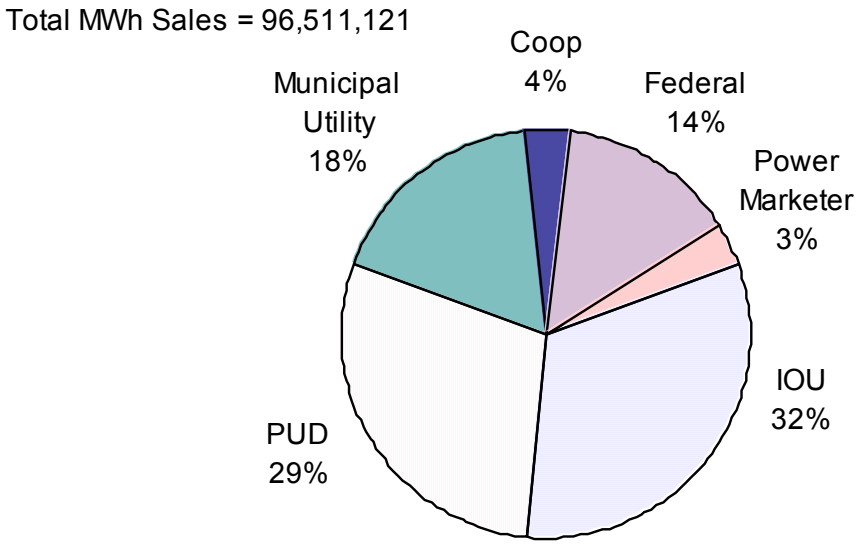
Figure 4.17 Washington Electric Utility Customer Share in 2000 by Class of Ownership



Source: EIA Electric Sales and Revenue Report

Investor-owned utilities serve a little less than half of the electric utility customers in Washington. Consumer-owned utilities (PUDs, municipal utilities, and cooperatives) account for most of the remaining customers. The small fraction attributed to 'Federal' reflects the small number of large industries directly served by BPA.

Figure 4.18 Washington State Electricity Sales in 2000 by Class of Ownership



Source: EIA Electric Sales and Revenue Report

In terms of electricity sales to end-use customers in 2000, public utilities accounted for a little more than half of the sales. Investor-owned utilities accounted for about a third of sales. Even though the BPA (federal-share) serves much less than 1 percent of the end-use customers (Direct Service Industries), the large volume of consumption for these customers adds up to almost 14 percent of sales. We have selected the year 2000 as a historically representative period prior to the nearly total shutdown of direct service industrial (aluminum industry) loads in 2001 and 2002.

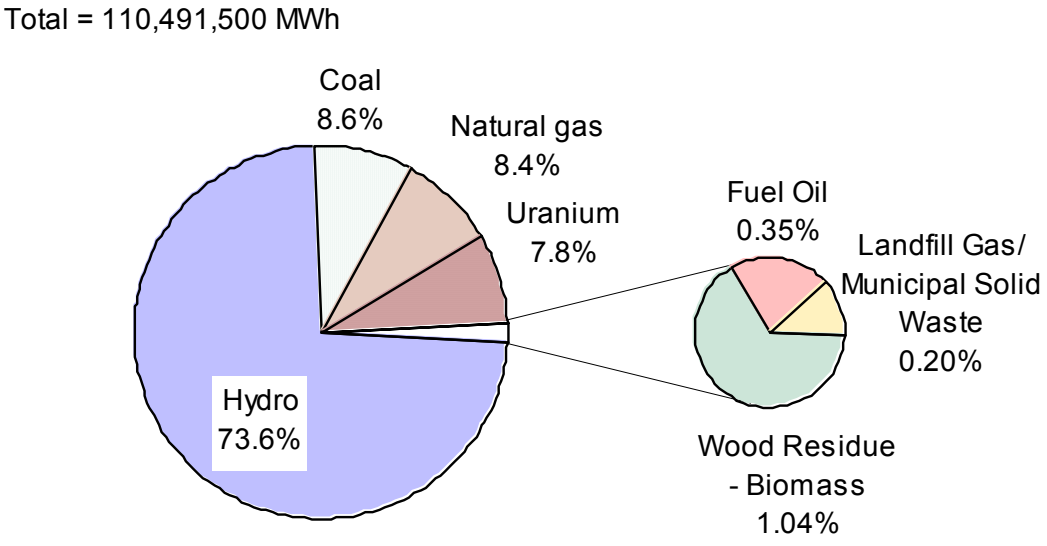
14. How does new generation influence the diversity of generation in the state?

Electricity generation in Washington is dominated by hydroelectric production, but new generation is predominately fueled by natural gas. Thus, the future generation mix will have a higher proportion of natural gas fueled generation and the hydroelectric share will decline, although it will still account for more than 60 percent of in-state electricity production.

Indicators:

- Washington's existing electricity generation capacity by type of fuel based on actual generation in 2000, which was a relatively typical year. [source: Washington's fuel mix disclosure database]
- Washington's new electricity generation capacity by type of fuel based on additions since June 2001 and plants currently under construction using estimated capacity factors. [source: NWPPC]
- Washington's projected electricity generation capacity by type of fuel based on a combination of the existing capacity and new capacity. [source: Washington's fuel mix disclosure database and NWPPC]

Figure 4.19 Washington's Existing Generation Fuel Mix



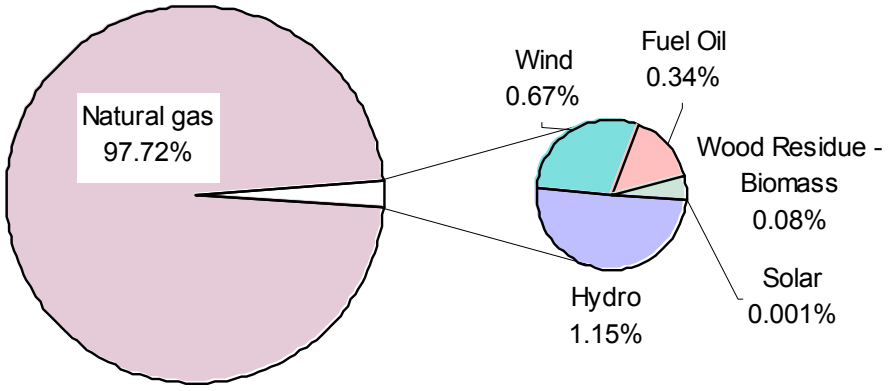
Source: Fuel Mix Disclosure Database

Washington's existing generation fuel mix is portrayed using actual generation data from 2000. This is a relatively typical year, and given the variable nature of hydroelectric generation, this is representative of the current generation fuel mix in the state. Almost three-quarters of the electricity generated in Washington State in 2000 were produced by hydroelectric power plants. Natural gas, coal-fired, and nuclear (uranium) power plants each account for about eight percent of electricity generation. A mix of fuel types make up the remaining one and a half percent of electricity generation in Washington.

Note. This figure represents electricity generated in Washington State. This differs from electricity generated or purchased by utilities in Washington State for consumption by Washington consumers.

Figure 4.20 New Generation Mix

Total = 20,723,100 MWh



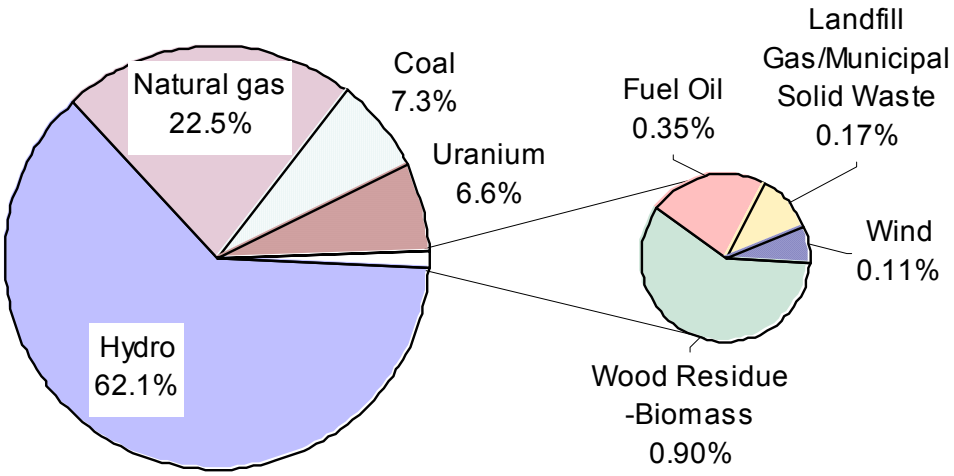
Note: New generation includes additions since June 2001,and plants currently under construction.

Source: NWPPC

Natural gas fired power plants account for almost all of the new generation capacity being added in Washington State. The remaining percentage of new generation is mostly a mix of hydro, wind, and diesel generators. Note that the electricity production from these plants is based on estimated capacity factors. Actual electricity generation from these new power plants will vary depending on electricity demand and energy market conditions.

Figure 4.21 Existing and New Generation Fuel Mix (Hypothetical)

Total = 131,214,700 MWh



Source: Fuel Mix Disclosure Database and NWPPC

This figure illustrates a hypothetical future electricity generation mix for Washington State based on the combination of the existing generation mix plus the new generation. In this illustration, the share for natural gas-fired generation increases to almost a quarter of the generation mix, while the shares for hydro, coal, and uranium decline. Hydro still accounts for over half of the generation capacity. Note that the actual future generation mix will depend on electricity demand, energy market conditions, and stream flows for hydro generation. Some existing capacity may be displaced by new generation capacity.

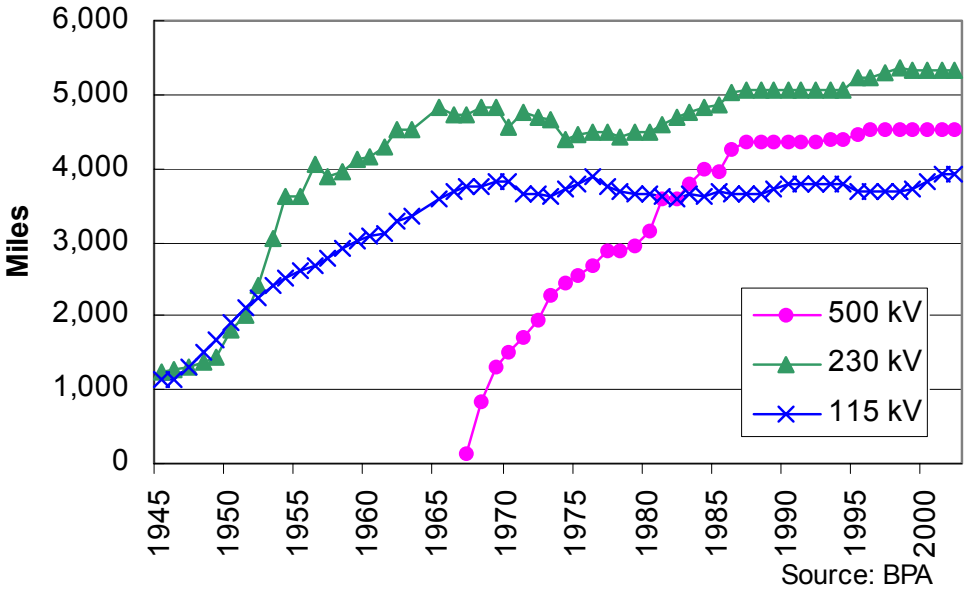
15. What is happening with the region's transmission system?

Very few circuit miles have been added to BPA's transmission system since 1987.

Indicator:

Operating circuit miles by line voltage in the BPA territory. [source: BPA]

Figure 4.22 BPA Transmission Line Construction



New transmission construction has been replaced in the last 14 years by additional reactive support and other mechanical and operational changes that allow the existing system to transmit more power. BPA is the major provider of transmission in the region. The existing transmission system is being pushed close to its limits and BPA has identified the need for significant upgrades to ensure future system reliability. Since BPA owns 75-80 percent of the high-voltage transmission in the Northwest Figure 4.22 uses BPA activity as a proxy for the region.

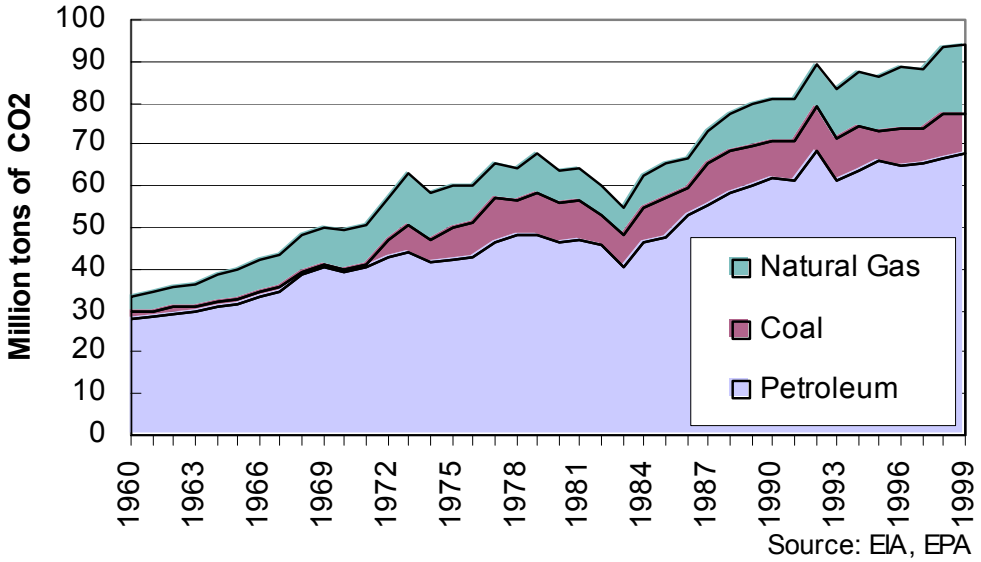
16. What is the impact of energy consumption in Washington on the production of greenhouse gases?

The production of greenhouse gas from energy use has grown significantly over the last 40 years. Consumption of petroleum products (primarily for transportation) is the major contributor to greenhouse gases in Washington. Electricity generation from fossil fuel sources (coal and natural gas) also contribute.

Indicator:

Carbon Dioxide emissions (the key greenhouse gas) from the consumption of energy in Washington State. [source: EIA]

Figure 4.23 Carbon Dioxide Emissions from Energy Use by Source



Carbon dioxide emissions from energy use have almost tripled in the last 40 years. This reflects increased consumption of fossil fuels in Washington State. Emissions from the consumption of petroleum (primarily for transportation) account for over two-thirds of total emissions. The consumption of fossil fuels (coal and natural gas) for electricity generation also contributes to greenhouse gas production. The majority of emissions from coal use are due to electricity production at the Centralia generating station.

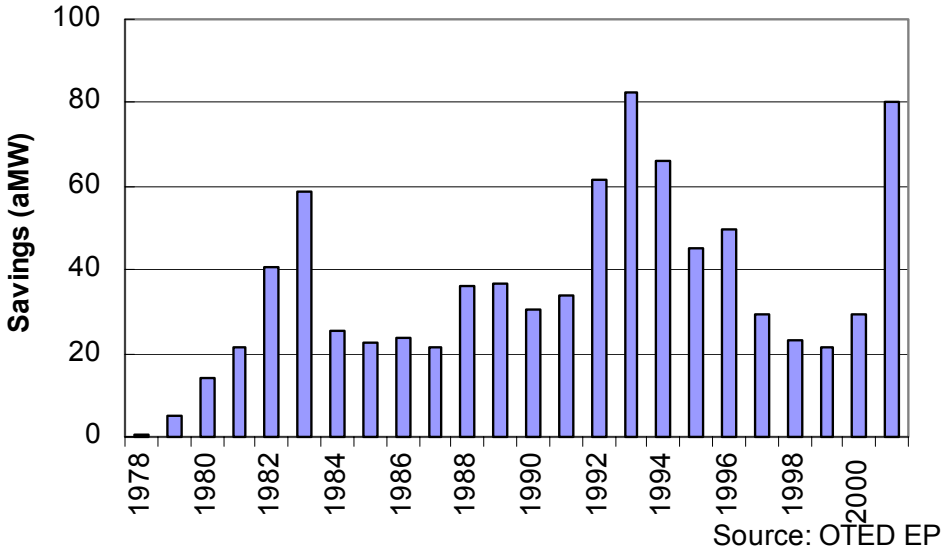
17. What is the level of energy conservation savings achieved in Washington?

The level of energy conservation savings in Washington has declined since the early 1990's, but jumped dramatically in 2001 in response to the West Coast energy crisis.

Indicator:

Historical energy conservation savings achieved by Washington utility energy efficiency programs. Note that 50 percent of the regional savings from BPA investments that is not apportioned to the region's ten major utilities is allocated to Washington for the estimate below. [source: NWPPC]

Figure 4.24 Washington Annual Savings for Electric Efficiency



Source: OTED EP

Savings from energy efficiency programs in Washington State have fluctuated significantly over the last 20 years, peaking in 1983, 1993, and 2001. After reaching a high in 1993, savings declined over 70 percent by 1999. This trend reversed in 2000 and savings in 2001 approached the historical high. Initial projections indicate savings will be less in 2002.

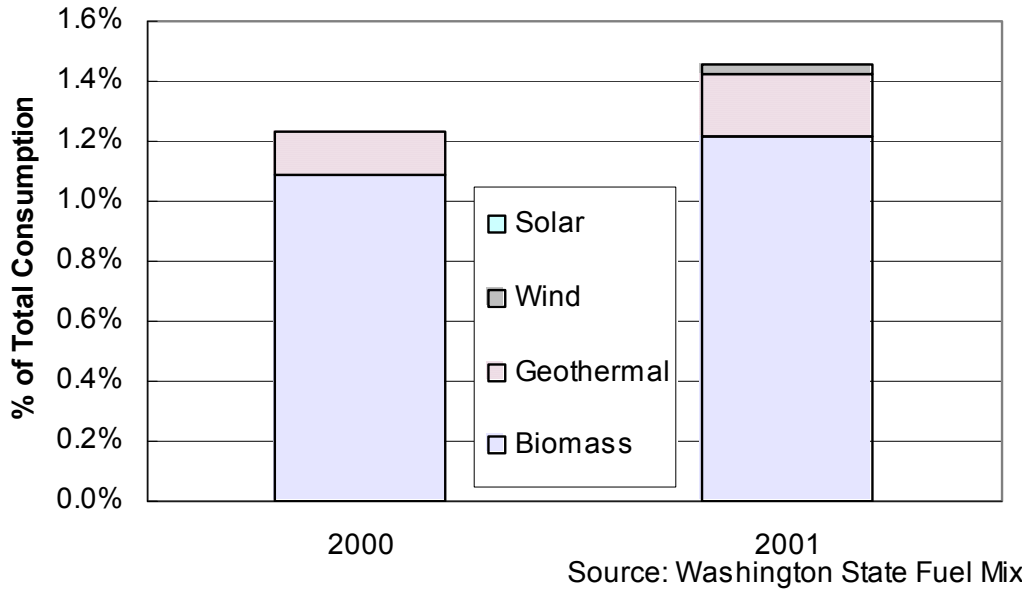
18. What percentage of the electricity consumed in Washington is produced from non hydroelectric renewable energy sources?

The portion of electricity from non-hydroelectric renewable generation sources that was consumed in Washington in 2001 was less than 1.5 percent of total consumption. Biomass is the largest renewable generation source. Electricity from wind generation accounts for less than half of a tenth of a percent of total consumption, but prior to 2001, there was no generation from this source.

Indicator:

The share of electricity sales from utilities to Washington consumers apportioned to renewable generation sources in the fuel mix disclosure reporting process. The renewable sources include biomass, geothermal, wind, and solar. Hydroelectric generation plant upgrades are also renewable, but are not included because they cannot be tracked in the fuel mix disclosure process. [source: Washington's fuel mix disclosure database]

Figure 4.25 Electricity Consumption in Washington from Renewable Sources



Source: Washington State Fuel Mix

The amount of electricity attributed to renewable sources that was sold to consumers in Washington State in 2001 was less than 1.5 percent of total consumption. Biomass accounts for most of the renewable electricity sales with geothermal accounting for most of the rest. There were no electricity sales from solar generation sources and 2001 is the first year there were sales from wind generation. There is a modest increase in the portion of renewable sales from 2000 to 2001, but total consumption in 2001 was less than in 2000 and the magnitude of renewable sales was also less.

THE JURISDICTIONAL SETTING OF WASHINGTON STATE'S ELECTRICITY POLICY APPENDIX A

The making of Washington State electricity policy takes place in a uniquely complex multi-jurisdictional setting. Our local, state, and federal governments all have important roles to play. The Pacific Northwest has geographical features that make it the only region in the country where hydropower is the principal source of electricity generation. The political decisions that created the Bonneville Power Administration (BPA) in 1937, and enhanced its role ever since, guaranteed that the federal government plays a dominant role in developing those hydropower resources. In addition, the federal government created the Northwest Power Planning Council (NWPPC) in 1980 as an interstate compact to conduct regional electricity planning (among other responsibilities) as a federal-state partnership. Thus, as the accompanying chart illustrates, there are few electricity policy decisions that can be made only at the state level. And, given the fragmented nature of the Washington utility structure with more than 60 utilities, there are no executive branch agencies that have jurisdiction over all electric utilities. Unlike other states where investor-owned utilities (IOUs) predominate and the public utility commission or its equivalent has an equal role in electricity policy in Washington's electricity policy is determined by continuous negotiations among utilities, governmental entities, customer and environmental interests, and federal decision makers.

In Washington, therefore, "state electricity policy" is almost a misnomer because there are few policies that apply uniformly to all participants in the electricity industry. Change in policies and practices in the electricity sector requires enormous political force because of the levels of government involved. While statewide coalitions of IOUs, large and small consumers of electricity, and environmental groups could negotiate restructuring legislation in Oregon and Montana (as well as in many other states), such discussions went nowhere in Washington. Washington's consumer-owned utilities (COUs) did not believe such an agreement would benefit their customers and did not support it. And, unlike the other states, where consumer-owned utilities could be exempted from legislation since they account for 25 percent or less of retail electricity sales, in Washington such an exemption would have been pointless since COUs account for 55 percent of retail sales. Indeed, Washington's consumer-owned utilities are often more interested in BPA policies and procedures than in the state legislative and regulatory processes. Washington's electricity policy is influenced more often by working indirectly with BPA than through legislative action.

BPA's unique role also amplifies the effects of federal policy making in the state and in the region. Not only do Washington electricity interests have to deal with all aspects of federal electricity policy such as the Federal Energy Regulatory Commission's (FERC) of Regional Transmission Organizations (RTOs) and Standard Market Design (SMD) proposals, but they also have to deal with them as filtered through BPA as well as through state regulatory bodies. Thus, lobbying BPA and those who have leverage over BPA, such as the Northwest congressional delegation and the NWPPC, is as much a part of state policy making as advocating before the governor, the legislature or the Washington Utilities and Transportation Commission (WUTC.) Because BPA is subject to a much wider set of federal statutes that affects its activities in such areas as water quality (Clean Water Act) and salmon recovery (Endangered Species Act and The Northwest Power Planning Act) in addition to how it markets its power, the range of influences on BPA that can affect Washington is too broad to fully enumerate. For example, a congressman in Louisiana whose district includes a company that owns an aluminum smelter in Washington will try to require BPA to sell power to that smelter by

amending pending legislation. Or a Northwest environmental group that advocates removal of the Snake River dams to enhance salmon recovery will take its case to newspaper editorial boards all over the country. Or the Northeast-Midwest coalition will advocate for higher BPA rates on the grounds that low rates provide an unfair advantage for the Northwest. Or, finally, government officials in California will assert an entitlement to BPA assets during the West Coast electricity crisis of 2000-2001.

The following table illustrates the complexity of the jurisdictional setting of Washington electricity policy by indicating the range of agencies and organizations that might be involved.

TABLE A.1: WASHINGTON'S ELECTRICITY POLICY RESPONSIBILITIES

Illustrative Policy Goals	Policy Pathways	Responsible State Agencies	Key Regional Entities	Federal Actors we need to influence	Other Considerations
Low Prices/Costs	Protect BPA as a regional resource	All	BPA itself NWPPC	Congress, DOE	We might also consider state legislative actions that encourage end users to undertake hedging strategies (conservation, self generation, contracts)
	Conservation & Efficiency mandates & incentives	CTED UTC Legislature DOR	NWPPC BPA	Congress	
	Smart financial mgt and resource decisions (integrated resource planning)	UTC (Public and Private Utilities)	BPA		
Adequate Electricity Supplies	Siting policies	Governor EFSEC Local governments Legislature		Congress (is considering federal role)	Note: According to BPA and NWPPC our resources are now adequate for the immediate future Building and acquiring resources are separate functions/ decisions in the current regulatory environment
	Reserve requirements/incentives	UTC (Public and Private Utilities)	BPA WECC	Congress FERC	
	Renewable incentives	Legislature DOR		Congress	
	Planning and Forecasting	CTED EP UTC Utilities	NWPPC BPA NWPP	DOE	
	Acquisition	UTC (Public and Private Utilities)	BPA		
	Demand Management	UTC (Public and Private Utilities)	BPA		
	Conservation/ Efficiency	See Above			
Reliable Service/ Adequate Transmission	Build needed transmission	UTC (Public and Private Utilities)	BPA (RTO, if formed)	FERC Congress	Entire WECC, including B.C. and Mexico, is also involved
	Manage transmission well	UTC (Public and Private Utilities)	BPA (RTO, if formed)	FERC	

Illustrative Policy Goals	Policy Pathways	Responsible State Agencies	Key Regional Entities	Federal Actors we need to influence	Other Considerations
	Planning for transmission needs	UTC (Public and Private Utilities)	BPA (RTO, if formed)	FERC	
	System reliability and security	UTC CTED	WECC NWPP	FERC Congress	
Mitigate Environmental Consequences of Electricity Generation	Salmon Recovery	Fish & Wildlife Ecology Salmon Recovery Funding Board Governor's office Local governments	NWPPC Regional managers of federal agencies	FERC: Hydro Licensing Federal Agencies: DOE/BPA, BOR, Corps, NMFS	NWPPC has large role in salmon recovery Washington Tribes are also important players in salmon recovery
	Air Quality	EFSEC Department of Ecology Local governments GA Procurement		EPA	
	Water Quality	EFSEC Department of Ecology Local governments	Regional managers of federal agencies	EPA FERC: Hydro Licensing	
	Global Warming	EFSEC Legislature		Multiple Federal entities	Many national and international entities are also involved
Natural gas supplies	Planning/Forecasting	CTED EP UTC (Public and Private Utilities)	NWPPC		If natural gas is likely to be predominant marginal resources

Note: Table A.1 illustrates some of the key policy goals for the state, but is not intended to be comprehensive. In addition, the table focuses on governmental institutions and does not reflect the significant role of private sector entities, such as the finance community and independent power producers.

PUBLIC COMMENTS ON STATE ENERGY STRATEGY GUIDING PRINCIPLES AND NARRATIVE APPENDIX B

The Department of Community, Trade and Economic Development (CTED) hosted two evening meetings to receive input from the public regarding the development of this state strategy focused on electricity. This is a summary of the comments made during these two meetings and reflects written comments received from one citizen, one environmental organization, one industrial customer organization, and one investor-owned utility.

The vast majority of comments to the strategy addressed the following three categories.

- Support integrated resource planning to ensure that resource acquisition follows the 1980 Power Act: develop cost-effective resources through conservation first, then renewable resources, and finally thermal generation.
- Plan for climate change – Assess how it will affect our economy, environment, and our hydropower supplies. Fully mitigate greenhouse gas emissions, particularly CO_2.
- Preserve regional preference to the federal hydropower system; ensure that it is a low-cost system.

This summary organizes public comments by State Energy Strategy Guiding Principles.

Principles #1 and #2: Encourage all load-serving entities to adopt and implement integrated resource plans to ensure they have adequate resources to meet their obligation to serve their customers' projected long-term energy and capacity needs. Encourage the development of a balanced, cost-effective and environmentally sound resource portfolio that includes conservation, renewable resources, and least-cost conventional resources.

The first two principles are inherently linked; therefore, public comments are combined here. Public comments highlighted the need for integrated resource planning (IRP) now. They noted that IRP should occur under a specific set of guidelines, such as those in the 1980 Power Act, to ensure that utilities are adequately investing in their power systems (conservation, generation, transmission, and distribution). One commenter noted that the state needs a full-fledged, quantitative risk analysis of our power system. The largest number of stakeholders repeated the request to establish a renewable portfolio standard (RPS). Several suggested that Washington support a long-term plan for energy sustainability. The industrial customers offered a different interpretation on resource acquisition; they indicated a necessity to balance long-term costs for resources versus near-term rate impacts.

Principle #3: Protect the benefits to Washington consumers from the Federal Columbia River Power and Transmission System (FCRPS).

There was support for this principle and comments generally indicated a desire to preserve low-cost power and a request to have Washington more involved in governing BPA. One comment went beyond this and challenged the state and stakeholders to determine the highest and best use of the federal hydropower system and consider that hydropower complements other intermittent renewable resources and could be used to facilitate the development of more renewable power generators.

Principle #4: Preserve and promote the state's cost-based energy system to benefit the end-use consumer by providing reliable power and reduce consumers' vulnerability to supply shortage and price volatility. At the same time, the state should promote policies that harness market forces in the wholesale energy market to reduce customer costs and increase reliability while protecting the environment.

Comments here indicate that our cost-based system should strive to produce low-cost power. Washington's industries need low-cost electricity that provides a competitive advantage that offsets higher transportation costs. Lastly, there were requests that

ratepayers not bear the costs of losses resulting from utility schemes to make money on the market.

Principle #5: Encourage utilities, BPA and others as they work to reduce congestion and improve the reliability of the transmission system, to assess all potentially practicable and cost-effective alternatives, including but not limited to targeted demand reductions, generation additions, system upgrades, and new line construction.

The public participants expressed a desire to grow and maintain the transmission system to improve operations of local systems and to foster the development of renewable resources. They were not interested in funding the expansion of a transmission system for the purpose of transmitting electricity out of the region. Participants expressed concerns regarding the ability of an RTO to effectively manage the transmission system.

Principle #6: Foster a predictable and stable investment climate to facilitate adequate and efficient access to capital markets for independent power producers, federal agencies and Washington's public and private energy industry.

Utility comments on this topic seek more involvement from the government. For example, state government should have a more proactive role in promoting investment in energy infrastructure and efficiency improvements; the state should investigate how other states have improved access to low-cost capital for investment in the electricity system; and, public officials can continue to demonstrate to capital markets that Washington's investor-owned utilities are regulated in a manner that facilitates timely and economic recovery of prudent capital investments. One public participant indicated that if "we" wanted investor-owned utilities to be partners, we needed to share some of the risk.

Principle #7: Promote Washington as a leader in clean energy technologies.

There was support for this principle, specifically directed at the state playing a bigger role in promoting renewable power and promoting sustainability beyond state agencies.

Principle #8: Rely on scientific and economic principles to inform energy policy.

One participant indicated that economic principles for decisions must not be short-term, but need to include the impact on global warming and the vulnerability to market manipulation and fluctuation caused by foreign oil dependence.

Principle #10: Educate the public on energy issues.

Several individuals believed the public must be educated to make informed choices about energy use and supply. They want government and utilities to engage community groups in the development of energy policy; they described the current array of electricity policy setting processes as a rugby scrum.

Principle #13: Promote energy policies that maintain and/or improve environmental quality.

One of the top three concerns expressed was to mitigate greenhouse gas emissions, particularly CO_2. The state and utilities should analyze the impacts of climate change on the supply of Northwest electricity due to reduction of snow pack and the effects on hydropower production. Additionally, they should analyze the impacts of climate change on demand for electricity load such as an increase in cooling load. More broadly, the state should analyze the economic and environmental impacts that climate change will have in Washington. Most participants wanted the guiding principles to address CO_2 emissions and global warming. Suggestions included phasing-in the full cost of greenhouse gas mitigation into electricity prices and creating legislation to register greenhouse gas emissions in order to give incentives to businesses to reduce emissions.

On a different note, one commenter indicated that the Northwest should not transmit electricity to California when doing so would impact salmon.

Leadership

Some participants spoke of the need for leadership from state government and the

energy stakeholders within Washington to create an electricity vision that addresses economic, environmental, and social equity issues. State leaders and the policies they implement need to articulate the state's philosophy and goals.

Finally, there were comments ranging from questioning the allocation of federal power to the aluminum industry to recognizing the basic need for electricity to survive (create an entitlement for low-income as needed), to recommending that the state's electricity system be carbon neutral by a certain date.

Northwest Independent Power Producers Coalition
NIPPC

January 10, 2003

Tony Usibelli, Assistant Director
CTED Energy Policy Group
925 Plum Street SE, Bldg. 4
PO Box 43173
Olympia, WA 98504-3173

Dear Tony:

Mr. John Maher and I alternated as the Northwest Independent Power Producers Coalition's representative to the Washington State Energy Strategy Advisory Committee. The following comments are submitted on behalf of the Coalition.

The recently-concluded update of the Washington State Energy Strategy was a very different exercise from the original effort. Ten years ago, the product emerged as the result of an extended consensus-building exercise managed by an independent consultant and chaired by Jim Waldo. Contemporary time and budgetary constraints understandably kept this successful formula from being repeated.

Nevertheless, the present document is a testimony to the considerable effort invested by you, your staff and the energy policy stakeholders advisory group over a very short period of time. The resulting report is appropriately linked to your office's biennial report since, apart from the "Guiding Principles" laboriously authored by the entire advisory group, the report itself is principally a product of the CTED Energy Policy Group.

Although consensus between the stakeholders was reached only on the Guiding Principles, the entire Energy Policy Group update provides good fodder for future discussions. We agree with your assessment that the work should continue with the ongoing participation of stakeholders including those missing from the 2003 Strategy. The Northwest Independent Power Producers Coalition is one stakeholder that looks forward to working with the Energy Policy Group as you continue helping to shape the Administration's energy policy.

Sincerely,

Dave Robertson

David Robertson
President, Board of Directors

CC: Martha Choe, Director
David Danner, Executive Policy Advisor
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REPORT ON ENGROSSED SUBSTITUTE HOUSE BILL 2522 APPENDIX D

Introduction

Engrossed Substitute House Bill 2522 reaffirmed earlier legislation directing the Department of General Administration (GA) and state agencies to purchase "clean fuel" vehicles, and added language to incorporate high gas mileage vehicles into the procurement specifications. HB 2522 also directed GA and state agencies to investigate opportunities for aggregate purchasing of said vehicles. The bill passed after the Model Year (MY) 2002 vehicle contract was already in use.[1]

Background

As the agency responsible for purchasing vehicles for state agencies, GA awards and administers model year light vehicle contracts each year. (Medium and heavy-duty trucks and specialized equipment are purchased on separately bid individual purchase orders for customers.) Awards are based on size classifications of vehicles and only one manufacturer's vehicle from one dealer is awarded each classification. Besides state dealer licensing requirements and equipment specification compliance, award criteria include consideration of base bid price, option pricing, prompt payment discounts, local sales tax differentials, fuel economy, emissions, and residual value.

[1] ESHB 2522, Sec. 5. In preparing the biennial energy report required under RCW 43.21F.045(2)(h) to be transmitted to the governor and the legislature by December 1, 2002, the department of community, trade, and economic development must include the following information: (1) The percentage of clean-fuel vehicles purchased in 2001 through a state contract pursuant to RCW 43.19.637; and (2) The results of efforts by the department of general administration and other state agencies to aggregate purchasing of clean technologies.

Current Washington State Clean Fuel Vehicle Specifications

RCW 43.19.637 requires that at least 75 percent of 2002 MY vehicles purchased through a state contract be "clean fuel" vehicles (CFVs). The state Department of Ecology has defined "clean fuel" vehicles as vehicles that, as equipped, have emission level certification eligible for registration in all 50 states, or are federally certified to the Clean Fuel Fleet program. Police vehicles and vehicles rated at over 8500 lbs. GVWR are exempt. Vehicle bidders need to indicate whether vehicles bid are 50 state certified, or are federally certified clean fuel fleet vehicles.

For model year 2003, the CFV standard percentage increases from 75 to 80 percent. GA did include an additional bid condition regarding vehicle fuel economy in response to Engrossed Substitute House Bill 2522.

The new bid language is as follows:

High MPG Vehicles

Besides the purchase of clean fuel vehicles, recently enacted engrossed substitute House Bill 2522 requires the state to seek opportunities to consolidate state and local purchases of high gas mileage vehicles. As part of the implementation of the act this year we have deleted and added some vehicle classifications. Because of relative low MPG we have deleted the carryall (4X4), Cargo Maxi-Van, and 15 Passenger Vans as separate classifications. In turn, we have added three high MPG classifications: High MPG Hybrid compact, High Roof/High MPG Cargo Van, High Roof/High MPG Passenger Van. These vehicle classifications have minimum MPG requirements. We also continue to factor fuel costs in the award of non-police autos and vehicles under 8500 # GVWR.

Finally, the state vehicle contract also establishes bid categories for vehicles that meet the National Energy Policy Act of 1992 requirements for alternative fuel vehicles. The federal regulations require the purchase of

alternate fuel vehicles by some centrally fueled state agency fleets.

Percentage of vehicles meeting "clean fuel" requirements

The MY 2002 contract had approximately 40 vehicles on contract; 22 of these categories were subject to the "clean fuel" vehicle requirement. During MY 2002, state agencies, colleges and universities purchased a total of 1244 vehicles. Of this amount, 480 vehicles were exempt from the CFV specification. Of the remaining 764 vehicles, 651 vehicles, or 85 percent, met the current CFV specification. During this same period, the state purchased 31 (four percent) hybrid-electric cars, and 306 (40 percent) flex-fueled E-85 vehicles. The latter cars qualify under the National Energy Policy Act (EPAct) alternative fuel vehicle purchase mandate. However, the total number of alternative fuel cars purchased by state agencies fell short of the federal mandate for MY 2002. For MY 2002, EPAct requires 75 percent of new light duty vehicles purchases made by covered state fleets be alternative fueled.

The MY 2003 vehicle purchase contract just opened. As a result, the percentage of vehicles meeting the 2003 CFV definition cannot yet be determined but is expected to meet the prescribed 80 percent goal. The new MY 2003 high MPG vehicle specification removes three vehicle classifications which historically exhibit low MPG, and added three higher MPG vehicle classifications. Again, purchasing is still open so the impact of these changes cannot yet be determined.

Discussion

CFV standard: The General Administration, in consultation with the Department of Ecology, plans to review the current "clean fuel" vehicle definition prior to setting the MY 2004 vehicle bid specifications. There is general agreement that the current CFV specification is fairly relaxed and can be met without much difficulty. Possible alternatives to the current standard include EPA's Green Vehicle Guide or the Green Guide to Cars and Trucks published by the American Council for an Energy Efficient Economy (ACEEE). Both of these guides use emission levels and fuel economy ratings to establish a ranking system. Another alternative, which may be considered, is California's Low Emission Vehicle (LEV) standards.

Any of these "standards" would be considerably more aggressive than the current CFV specification. As a result, a new standard could dramatically affect the purchasing patterns of state agencies. For example, GA did a preliminary calculation of MY 2002 bid categories using the ACEEE guide. If a minimum three-star standard was adopted (out of a total of five stars), only 9 of the 22 vehicle categories would have qualified. In addition, vehicle procurement costs would be expected to increase for at least some of the bid categories.

As the procurement arm for state agencies, GA is sensitive to any fiscal or mission impacts that an aggressive CFV specification could cause. Therefore, direction from the legislature may be required if a new, more aggressive CFV specification is proposed. For example, the Toyota Prius hybrid is again available on the MY 2003 contract for voluntary purchase. While it achieves the goal of high fuel economy and low emissions, it has a substantial upcharge of $8,700 over the comparably sized Chevrolet Cavalier sedan on contract, and $5,100 over the larger Ford Taurus flexible fuel vehicle. At the current $1.30 per gallon gas price GA uses to compare vehicle lifecycle costs, it would take over 300,000 miles to recover the incremental costs of the Prius over the Cavalier, and 120,000 miles for the Taurus FFV.

High MPG improvements: In response to HB 2522, GA did include fuel economy changes to the MY 2003 vehicle bid specifications. These changes include the following:

- Eliminated the fuel inefficient carryall 4x4 classification (Excursion, Suburban) from state vehicle contracts. Eliminated separate categories for maxi vans, making them only available as an up-charge option off smaller, more fuel-efficient vans.
- Established three separate categories for high MPG hybrid sedans, cargo and passenger vans. Awarded vehicles include the Toyota Prius and Freightliner Sprinter vans. The Prius attains city MPG in excess of 50 MPG. The Sprinter vans, powered by

a diesel engine, attain a fuel economy of 20 MPG.

- Established a new small utility vehicle 4x4 category with a four-cylinder engine. The awarded vehicle is the Chevrolet Tracker, which attains 22 MPG city, 25 highway.
- Lowered engine displacement requirements on some vehicle bid categories.
- Clearly show city/hwy MPG, emission certification level, and mercury content of each vehicle on contract.
- After the expiration of the MY 2003 contract next spring, will promote and conduct PO bids for other hybrid and/or high MPG vehicles specifically requisitioned by customers.
- Continue to track the development and availability of new hybrid type vehicles (Honda Civic, Ford Escape, Dodge Dakota, etc.) in order to have contracts in place for future customer selection.

GA also continues to award contracts on the basis of life cycle costing and factors not only the bid price but also option pricing, fuel economy, and residual value. For fuel economy on light vehicles, GA calculates the cost of fuel for 75,000 miles using EPA published city MPG at a current figure of $1.30 per gallon.

Aggregate purchasing: HB 2522 directs GA and state agencies to investigate aggregate purchasing. Currently, Washington state agencies, colleges, universities, and institutions are automatically eligible to purchase vehicles on state contract. Political subdivisions of the state of Washington who are members of the state purchasing co-op are also eligible to purchase on state contract.

Qualified co-op member non-profit corporations within the state may also be eligible to purchase. In addition, through a cooperative agreement between the states, Oregon political subdivisions that are members of their purchasing co-op may also purchase on Washington's contract.

The Toyota Prius is an example of the aggregate purchasing power of the state contract. GA was able to secure a favorable bid price for the Prius ($500 -$1000 lower than other contracted prices) and has sold 174 Prius to state agencies and political subdivisions through MY 2002. Washington was the first state in the U.S. to contract for the Prius, and had the third highest volume of sales in the country behind New York and California.

GA has also been working with the Western States Contracting Alliance to explore joint contracting with seventeen western states. A preliminary survey of participant states was conducted to gauge interest in procuring the electric hybrid Toyota Prius. The survey indicated that there wasn't sufficient interest, citing Buy American preferences, different equipment specifications, budgetary constraints and most importantly, varying dealer licensing requirements, as obstacles to the purchase.

List of Acronyms and Abbreviations APPENDIX E

aMW	Average Megawatt (8,760 MW-hours)
BPA	Bonneville Power Administration
BOR	U.S. Bureau of Reclamation (previously WPRS)
COU	Consumer Owned Utility
CREPC	Committee for Regional Electric Power Cooperation
CTED	Washington State Department of Community, Trade and Economic Development
DOE	U.S. Department of Energy
DOR	Washington State Department of Revenue
EFSEC	Energy Facility Site Evaluation Council
EIA	U.S. Department of Energy Information Administration
EPA	Federal Environmental Protection Agency
FCRPS	Federal Columbia River Power System
FERC	Federal Energy Regulatory Commission
FTR	Firm Transmission Right
GA	Washington State Department of General Administration
IOU	Investor-owned utility
IPCC	Intergovernmental Panel of Climate Change
IPP	Independent Power Producer
IRP	Integrated Resource Plans
ISO	Independent System Operator
kWh	Kilowatt hour
LED	Light-emitting diode
LIHEAP	Low-Income Home Energy Assistance Program
MMBtu	Million Btu
MMcf	Million cubic feet
MW	Megawatt
MY	Model Year
NERC	North American Electric Reliability Council
NMFS	National Marine Fisheries Service
NOPR	Notice of proposed rulemaking
NRTA	Northwest Regional Transmission Association
NWPP	Northwest Power Pool
NWPPC	Northwest Power Planning Council

PSC	Public Service Commission
RRO	Regional Reliability Organization
RTF	Regional Technical Forum
RTO	Regional Transmission Organization
SBC	Systems Benefit Charge
SEDS	State Energy Data System (EIA)
SES	State Energy Strategy
SMD	Standard market design
SWRTA	Southwest Regional Transmission Association
UTC	Washington Utilities and Transportation Commission
WECC	Western Electricity Coordinating Council
WGA	Western Governor Association
WIEB	Western Interstate Energy Board
WIO	Western Interconnection Organization
WRTA	Western Regional Transmission Association
WSCC	Western Systems Coordinating Council

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♦ Energy Emergencies, Security, and Contingency Planning	Mark Anderson, Cory Plantenberg
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♦ Global Climate Change/Greenhouse Gasses	Tony Usibelli
♦ Grants & Contracts, Petroleum Violation Escrow Funds	Cory Plantenberg
♦ Hydropower	Tim Stearns
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♦ National Energy Issues	Tony Usibelli, Howard Schwartz
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♦ WA State Energy Strategy	Tony Usibelli, Howard Schwartz